Appendix A. EPA CCMP Guidance for CCMP Revision

National Estuary Program Comprehensive Conservation and Management Plan Revision and Update Guidelines
5-3-16

Background

The *National Estuary Program FY 15 -16 Clean Water Act Section 320 Funding Guidance for National Estuary Program (NEP) Directors* broadly communicates expectations for Comprehensive Conservation and Management Plan (CCMP) Revisions and Updates. The CCMP contains goals and objectives and provides a long-term framework for action. It also includes strategies to: monitor progress, finance CCMP implementation, and communicate with stakeholders. EPA's CCMP Content Checklist, provided below, is designed to help you navigate through the CCMP Revision and Update process, beginning with general definitions and principles.

In addition to the latest National Estuary Program Funding Guidance, it may be useful to refer to the *National Estuary Program Guidance, Comprehensive Conservation and Management Plans: Content and Approval Requirements (October 1992),* as you revise or update your CCMP. These documents can be found on the NEP SharePoint site, or are available by contacting your HQ Coordinator.

Scope of CCMPs – All CCMP action plans must be consistent with and tie back to CWA Section 320. Action plans must identify the needed resources and sources of resources expected to be secured. It is especially important to distinguish between actions funded under Section 320 and those to be implemented with other sources.

CCMP Revisions versus Updates – The Funding Guidance describes when a CCMP Revision or an Update would apply. Revisions involve a significant change. For example, a CCMP Revision could be driven by: 1) new CCMP goals, as directed by the Management Conference, 2) new information obtained through monitoring that would require revisiting and changing the actions in a CCMP; or 3) an expansion of the study area. A Revision would also be necessary in cases where original CCMPs have not yet been revised. Minor changes to action plans or insertion of a few new actions would be considered an Update. Reformatting, streamlining or reorganizing core actions to reflect new ways of accomplishing original CCMP goals would also be considered an Update.

CCMP Formats – EPA is not prescribing any particular CCMP format as long as the CCMP meets the Content Checklist.

Review Process – The Region is in the lead with respect to CCMP Revisions and Updates. The Region will work in concert with HQ, using the CCMP Content Checklist and the NEP Funding Guidance as a basis for engaging in the concurrence process. Regional Coordinators will work

with the NEP Director and Management Conference to follow the checklist so that the set of content requirements are reflected in the final CCMP and associated documents.

To ensure a common understanding and level of support for the final CCMP, this process assumes that the HQ and Regional Coordinators are regularly communicating and collaborating as needed throughout the process. The Regional Coordinator is responsible for timely communication and for managing the overall review schedule. EPA expects that the NEP will make the changes necessary to the CCMP and associated documents to reflect the Content Checklist. HQ Coordinators will need to honor the CCMP review schedule, while Regional Coordinators need to share documents to allow adequate time for review.

Program Evaluations – To ensure the seamless integration among key NEP products, EPA expects that the Program Evaluations will consider the need, if any, for revisions or updates to the CCMP. EPA also expects that State of the Bay Reports will inform any CCMP Revisions and Updates.

Content Checklist - Essential Components of a Revised CCMP (major changes)

A Revised CCMP should:

1.____ Identify clearly if there are any changes between the existing and draft CCMP so that reviewers and the public can easily determine what has changed and why. These changes include program priorities and goals; any new information that suggests more promising approaches or currently unaddressed issues, etc.

2.____ Describe how the NEP has contributed to or supported activities that helped develop new information, if applicable, when highlighting major changes due to new information. Major changes could be informed by Status and Trends or State of the Estuary Reports, Indicator Reports, and associated monitoring programs where adequate monitoring data are available. This is where a discussion of climate change assessments and adaptation strategies should appear.

3.____ Include a map of the study area. If there are any boundary changes, provide the reasons for those changes. Any NEP study area boundary changes should be based on sound science with the support and approval of the NEP's Management Conference in a transparent and open process.

4.____ Describe the NEP's Management Conference and membership with any proposed changes and explain how the structure will support the NEP's ability to oversee and promote CCMP implementation. This would include a discussion about the NEP's approach to achieving financial sustainability and for involving the public and stakeholders in its programs.

5.____ Discuss changes to existing CCMP action plans, and new action plans, including their relationship to previously stated goals and priority problems; the probable causes and sources they address; and measurable objectives, where appropriate, to attain the goal.

Each CCMP Action must identify the key activities expected to be implemented to address the priority problem. It would be very helpful to include a table comparing the old completed or deemed obsolete actions, and new, revised, or on-going actions in the CCMP. This could appear upfront in the document, or within each chapter.

CCMP Actions encompass environmental goals, metrics, and milestones that the NEP strives to achieve over time as implemented through annual workplans. They need to be clear, understandable, and plainly link to CWA § 320 (See 4th bullet *under* ***Purpose of Conference***). They should:

a) describe each action and what is proposed;

b) identify key activities to implement the action, including affected habitat types, or resource(s) if appropriate; some activities may take place system-wide or involve policy changes rather than in-the-ground projects.

c) identify proposed action plan responsibilities, including likely lead parties if known, along with any implementing partners;

d) include a timeframe, and where appropriate, key milestones for completion (or indicate on-going);

e) estimate the range of potential costs of the overall action and identify the possible sources of funding; and

f) include performance measures (quantitative measures and intended environmental results wherever possible).

Those CCMP Actions eligible for CWA §320 funding (and as stated in your EPA Assistance Agreement) will be spelled out and included in the NEP workplan submitted to EPA. CCMP Actions not funded by Section 320 should be clearly identified along with the other potential funding source.

CCMPs are living documents and as such should be re-examined and revised on a regular basis. EPA recognizes that CCMPs are also critical components of the NEP model of adaptive management as it facilitates a continual process of integrating new data and results. EPA expects that revised CCMPs will discuss the relevance and applicability of the: 1) monitoring, 2) habitat, 3) finance, and 4) outreach component strategies, including any needed substantive changes. If such changes are not discussed in the revised CCMP as language within a chapter or as a separate Action Plan, they should be described in a separate document and completed within 3 years of the final Revised CCMP.

1.____ Include a Monitoring approach to track and detect changes and/or improvements within the study area (so change in environmental indicators can be detected over time), and effectiveness of CCMP Actions. This can be described in a separate, brief, higher level document, or chapter or action in the CCMP. The Monitoring approach should identify: a) objectives, b) data the NEP and partners are collecting for which parameters; c) the party/parties responsible for collecting the data; d) frequency of collecting and reporting

the monitoring data; e) how the data are shared, reported, and used; f) data gaps; and g) additional funding needed for monitoring activities and filling data gaps. This section should explain how monitoring has/will change as a result of new/modified actions and priorities, and any new environmental indicators. Monitoring should be tied to the State of the Bay Report which has similar components. **Please note**: A Quality Management Plan or Quality Assurance Project Plan can supplement the Monitoring Plan, but does not in and of itself meet this requirement.

2.____ Include a Finance strategy that will establish long-term financial sustainability to implement the CCMP through diverse resources and partners. The strategy can be a separate document or chapter or action in the CCMP. The strategy should discuss: a) priorities for funding; b) current funding and other support such as staff assignments, or in-kind partnering; c) short- and long-term resource needs; and d) proposed actions or strategies to maintain or garner new resources for CCMP implementation and their timeframe.

3.____ Include a Habitat Protection/Restoration strategy. The strategy should clearly tie back to habitat or ecosystem issues addressed in the CCMP, including those habitats and species prioritized for protection and or restoration efforts. Strategies can be addressed in a separate document or as an action in the CCMP and should discuss: a) relevant habitat types and key species in the study area; b) goals and measurable objectives to address them; and c) actions that reflect a climate change vulnerability assessment. The Strategy can make it easier for NEPs to plan and report on their habitat protection results under GPRA.

4. Include a Communication/Outreach Strategy to ensure community involvement and ownership in CCMP implementation that can be represented as a stand-alone document, chapter, or a series of actions in the CCMP that includes: a) guiding principles, or goals and objectives; b) a target audience(s); c) a narrative description of activities, including any tool used such as branding and messaging, behavior change campaigns, or social media; d) implementers for those activities; e) any key deliverables, and f) a budget and timeframe for implementing the activities.

   NOTE: Make sure to include a public review process that extends beyond the Management Conference members. Responses to comments should be summarized and be made publically available.

Content Checklist - Essential Components of an Updated CCMP (minor changes)

An Updated CCMP can take the form of: 1) an Addendum to the Current CCMP, 2) a Strategic Plan or updated Implementation Plan that serves as a companion piece to the CCMP, or 3) changes to select Action Plans in the current CCMP. An updated CCMP should:

1.____ Describe clearly the priorities, goals, measurable objectives (where possible), and Action Plans. Changes made from the previous CCMP should be described in the document.

This could include a summary table listing the prior CCMP's actions as either: completed, revised, new, ongoing, or those deemed obsolete.

2.____ Clarify whether Action Plans are replacements for or enhancements of former/previous Action Plans. Clearly articulate how CCMP and Actions relate to the previous CCMP. (This enables the reader to understand: what changed and why, which actions are new, what was completed, and why actions were not implemented, etc.). The discussion of changes may be contained in the Introduction or an Appendix that might include a comparative table of original and revised actions.

3.____ Be clear, understandable, and consistent with and linked to CWA § 320 (See 4th bullet under ***Purpose of Conference***). Action plans should:

a) describe the activity/what is proposed;

b) articulate where the action will take place or location and/or resource (s) it will affect;

c) identify the entities responsible for implementing the action if known, including likely lead parties if known, along with any implementing partners;

d) include a timeframe, and where appropriate, key milestones for completion;

e) provide the potential cost of the action (can be a range) and potential sources of funding; and

f) address performance measures (quantitative/environmental results measures where possible).

Those CCMP Actions eligible for CWA §320 funding (and as stated in your EPA Assistance Agreement) should be fleshed out and contained in the NEP Workplan submitted to EPA. CCMP Actions not funded by Section 320 should be clearly identified along with the potential funding source.

4.____ Describe any other changes to your existing CCMP and identify those changes. This may be done in an Appendix.

5.____Depending on the extent and magnitude of the changes, stakeholder involvement could simply involve an internal Management Conference member discussion. If the NEP decides to send the Updated CCMP out more broadly for public comment, response to comments should be summarized and be made available.

Process for CCMP Revisions and Updates

Regional and Headquarters Coordinators will collaboratively review updated and revised CCMPs so that EPA can respond with one voice to the proposed changes. A key element of this cooperation is early communication between Coordinators as the process unfolds. The Regional Coordinator will take the lead in identifying potential issues in a timely manner and securing the endorsement of Regional management in providing the final CCMP for Headquarters review.

The checklist is a means to ensure common review and comment criteria. Note that delivery and review of CCMP documents will be through email or other digital means.

- Regional Coordinator shares early draft versions of the CCMP and associated documents with the HQ Coordinator. Coordinators confer and discuss initial feedback on documents. Regional Coordinator shares feedback with NEP Director and may invite the Headquarters Coordinator to participate in discussions.

- Regional Coordinator sends final draft CCMP and associated documents to HQ Coordinator for comment. Region works with HQ to develop and provide integrated EPA comments to the NEP Director.

- The NEP addresses EPA comments. If any issues remain, the Regional Coordinator will work with the NEP Director, Management Conference and Regional Managers to resolve as necessary. The Regional Coordinator may invite the HQ Coordinator in these discussions, as necessary.

- Regional Coordinator shares the revised final draft CCMP and associated documents with the HQ Coordinator to ensure that the documents reflect and address: 1) elements identified in the NEP Funding Guidance, 2) CCMP Checklist components, and 3) HQ comments, upon which review, the HQ and Regional Coordinators jointly agree that the draft CCMP is ready for submission as final.

- HQ Coordinator confirms with the appropriate HQ Manager* that the document addresses all comments and requirements, and will be submitted as final by the Regional Manager.

- The Regional Coordinator formally requests the Regional Manager to send a concurrence email to the appropriate HQ Manager* certifying that the final CCMP submission meets the CCMP Guidelines with a copy to the HQ and Regional Coordinators.

- The appropriate HQ Manager* acknowledges the Regional Manager's certification that the CCMP meets the Guidelines. The CCMP, any associated documents, and the HQ email acknowledgement (with copy to the HQ and Regional Coordinators), serves as the final and official record of the CCMP Revision or Update."

*Division Director for CCMP Revisions and Branch Chief for CCMP Updates

Appendix B. 2003 CCMP Action Items

1. Protecting Public Health

1.1. Establish a central clearinghouse program for all beach testing and closure information generated for Massachusetts' coastal public beaches

2. Protecting and Enhancing Shellfish Resources

2.1. Conduct three Sanitary Survey Training Sessions annually -- one each on the North Shore, Metro Boston/South Shore, and Cape Cod -- to educate local shellfish constables and health officers on the proper techniques for identifying and evaluating pathogen inputs into shellfish harvesting areas

2.2. Develop and administer a local Shellfish Management Grants Program to help communities finance the development and implementation of effective local shellfish management plans

2.3. Continue and expand the Shellfish Bed Restoration Program to restore and protect shellfish beds impacted by nonpoint source pollution

2.4. Through the Shellfish Clean Water Initiative (SCWI), complete an Interagency Agreement to define agency roles and contributions to protect shellfish resources from pollution sources

3. Protecting and Enhancing Coastal Habitat

3.1. Prepare and implement an EOEA - approved Open Space Plan to preserve and protect key wetlands, floodplains, fish and wildlife habitat, and other ecologically- and recreationally-important natural resource areas

3.2. Adopt and implement a local Riverfront District Bylaw to maintain river water quality, preserve fish and wildlife habitat, and protect downstream nursery and shellfish resources

3.3. Work cooperatively with neighboring communities, EOEA agencies, and other interested parties to develop proactive, long-term ACEC Management Plans to preserve and protect these vital resource areas

3.4. Adopt and implement a local Wetlands Protection Bylaw to supplement the state Wetlands Protection Act Regulations

3.5. Prepare and implement ecosystem-based Barrier Beach Management Plans to promote responsible use and protection of these critical coastal resources

3.6. Employ full-time, professionally-trained conservation staff to provide ongoing technical and administrative support to local Conservation Commissions

3.7. Continue to develop Resource Management Plans for all DCR-owned coastal properties

3.8. Develop and promote the use of river basin planning reports to facilitate responsible water resources planning and management at the local and regional levels

3.9. Acquire and restore undeveloped coastal properties that offer outstanding living resources habitat and public recreation opportunities

3.10. Complete the statewide inventorying and mapping of coastal and inland wetlands, and provide local Conservation Commissions with: 1) accurate base maps depicting wetland boundaries, and 2) instruction on proper wetland map interpretation and use

3.11. In collaboration with the Riverways Program, prepare an up-to-date inventory of anadromous fish runs in the Massachusetts Bays region and develop a strategy to prioritize, restore, and maintain these runs

3.12. In collaboration with the Riverways Program, develop and implement a citizen-based Fishway Stewardship Program to restore and maintain anadromous fish runs along the Massachusetts Bays coast

3.13. Continue the Wetlands Restoration Program to restore and protect degraded coastal and inland wetlands

3.14. Continue and expand current efforts to support eelgrass habitat protection and restoration in Massachusetts and Cape Cod Bays

3.15. Work with CZM to develop scientific methods for assessing the ecological integrity of coastal wetlands and to train volunteers in data collection

4. Reducing and Preventing Stormwater Pollution

4.1. Adopt subdivision regulations that require the incorporation of stormwater runoff best management practices (BMPs) into all new development plans

4.2. Implement best management practices to mitigate existing stormwater discharges that are causing or contributing to the closure of shellfish harvesting areas and swimming beaches

4.3. In collaboration with Regional Planning Agencies, Natural Resources Conservation Service/MassCAP (formerly US Soil Conservation Service), and Massachusetts Coastal Zone Management Office, should: 1) disseminate its Nonpoint Source Management Manual and Urban Best Management Practices for Massachusetts, and 2) sponsor public workshops to educate local officials about best management practices and performance standards for controlling stormwater runoff

4.4. Develop a coordinated and streamlined regulatory system within DEP to assure effective implementation of the stormwater components of the Massachusetts Clean Water Act, Wetlands Protection Act, and Federal Stormwater Program (Federal Clean Water Act, Sections 401 and 402)

4.5. Reduce stormwater pollution in the Massachusetts Bays watersheds through: (a) technical assistance to communities in developing comprehensive stormwater management programs; and (b) National Pollutant Discharge Elimination System (NPDES) compliance for industrial stormwater dischargers Targeted areas are the lower Charles River for the stormwater management programs and the Neponset River for the industrial stormwater dischargers

4.6. Prepare an Environmental Manual to complement the Highway Design Manual and provide for the integration of environmental concerns (including stormwater management) into all phases of highway project planning, design, construction, and maintenance

4.7. As part of its forthcoming pollution prevention plan, develop a Stormwater Pollution Mitigation Program to identify, prioritize, and correct existing stormwater pollution problems associated with state highway drainage facilities

4.8. Sponsor annual workshops to train local public works personnel on the proper use of stormwater runoff best management practices

4.9. Require the use of on-site stormwater best management practices as a precondition to the permitting of private property tie-ins to state drainage facilities

4.10. Develop and implement stormwater management plans for compliance with Phase II NPDES regulations

4.11. Provide technical assistance for developing and implementing non-structural Best Management Practices, support efforts to create local stormwater utilities, provide grant writing support to municipalities for implementing the stormwater policy, Phase II requirements, and resource protection efforts, and support the efforts of DEP and CZM to revise and update the stormwater policy

5. Reducing and Preventing Toxic Pollution

5.1. Adopt and implement the following set of regulations to ensure the safe use, storage, and disposal of toxic and hazardous materials: 1) Toxic and Hazardous Materials Regulation, 2) Underground Storage Tank Regulation, 3) Commercial/Industrial Floor Drain Regulation

5.2. Establish Household Hazardous Waste Collection Programs for difficult-to-manage hazardous products to ensure their proper disposal on a regular basis

5.3. In collaboration with the Department of Environmental Protection, develop and offer continuing education courses on hazardous materials management to create a pool of trained "HazMat Specialists" at the local level

5.4. Form partnerships to facilitate the safe management of hazardous products, emphasizing reduced products use and recycling wherever possible

5.5. Reduce and prevent toxic pollution through targeted National Pollutant Discharge Elimination System (NPDES) permitting of significant discharges in the Massachusetts Bays; in particular, oil tank farms on Chelsea Creek and the Island End River

5.6. Continue to perform on-site assessments and provide instructional materials to help businesses and industries in the Massachusetts Bays region reduce the use of toxic substances

6. Reducing and Preventing Oil Pollution

6.1. Establish and promote the use of Used Motor Oil Collection Facilities to ensure the proper collection and disposal of used motor oil from do-it-yourself oil changes

6.2. In collaboration with the US Coast Guard, EPA, and NOAA, implement the Policy on the Use of Oil Spill Chemical Countermeasures (Dispersants) to protect coastal resources from the adverse effects of oil spills

6.3. In collaboration with other federal, state, and local agencies, continue to update and implement the Massachusetts coastwide Area Contingency Plans to assure a rapid and effective response to discharges of oil and other hazardous substances into the marine environment

7. Managing Municipal Wastewater

7.1. In collaboration with other state and federal agencies, continue to implement the Ocean Sanctuaries Act by closely monitoring all facilities plans which propose increased wastewater treatment plant discharges into an ocean sanctuary

7.2. Support the control of combined sewer overflows in the Massachusetts Bays watersheds, especially the lower Charles River, and target National Pollutant Discharge Elimination Systems (NPDES) permitting to implement technology and water quality-based requirements in the Merrimack River watershed

7.3. Work collaboratively to develop and implement an effective program for monitoring and enforcing point source discharges from wastewater treatment plants and energy-producing facilities

7.4. In cooperation with UMass, EOEA, CZM, and MBP, analyze and determine the Total Maximum Daily Loads (TMDLs) of nitrogen for coastal embayments and develop management plans for wastewater treatment facilities to adapt to these new standards

7.5. Identify resource areas sensitive to wastewater and develop management plans appropriate to these areas, focusing on the capacities of natural systems to assimilate wastewater

7.6. In cooperation with DEP, develop and implement regular inspection and maintenance (I/M) programs for on-site wastewater systems

7.7. Employ full-time, professionally-trained public health staff to provide ongoing technical and administrative support to the local Boards of Health

7.8. Establish a Title 5 and alternative systems technical assistance program directed to local Boards of Health and health agents, systems engineers/ installers, and homeowners

7.9. Evaluate and build upon the centralized statewide repository for testing information on alternative technologies, to be established as part of the Buzzards Bay Project's two-year Environmental Technology Initiative Project

7.10. Plan for decentralized wastewater management and treatment

8. Managing Boat Wastes and Marine Pollution

8.1. Work cooperatively with neighboring communities, private boatyards and marinas, and state agencies (DFG and CZM) to establish, promote, and maintain Boat Pumpout Programs in targeted embayment areas

8.2. With assistance from CZM and DEP, require private boatyards and marinas to implement effective stormwater runoff control strategies which include the use of pollution prevention measures and the proper design and maintenance of hull servicing areas

9. Managing Dredging and Dredged Materials Disposal

9.1. Continue to monitor dredged material disposal sites in the Massachusetts Bays region and initiate the planning necessary to begin a capping demonstration project at the Massachusetts Bay Disposal Site

9.2. Coordinate the development of a comprehensive Dredging and Dredged Materials Disposal Plan to improve and maintain access to the Commonwealth's ports, harbors, and channels, and to minimize adverse impacts to the marine environment

10. Reducing Marine Debris and Marine Floatables

10.1. Work cooperatively with the Massachusetts Coastal Zone Management Office (CZM), neighboring communities, and waterfront users to design and implement Beach and Marine Debris Reduction Programs

11. Protecting Nitrogen Sensitive Embayments

11.1. Strengthen Massachusetts Water Quality Standards to enhance and protect nitrogen-sensitive coastal embayments

11.2. Work collaboratively to expand upon current Massachusetts Bays Program efforts to identify nitrogen-sensitive embayments, determine critical loading rates, and recommend actions to manage nitrogen so as to prevent or reduce excessive nitrogen loading to coastal waters and groundwater

12. Enhancing Public Access and the Working Waterfront

12.1. Develop and implement Municipal Harbor Plans which: 1) promote marine-dependent waterfront uses, 2) enhance public access to the water, and 3) protect habitat of shellfish and other living resources

12.2. Enhance the Designated Port Area (DPA) program with new planning and promotional initiatives

12.3. Establish a new technical assistance program to accelerate municipal efforts to identify and legally reclaim historic rights-of-way to the sea

12.4. In collaboration with the Department of Conservation and Recreation and MassGIS, prepare and distribute a statewide Coastal Access Guide to facilitate public access to the shoreline

12.5. In collaboration with coastal municipalities, develop and implement an Access-Via-Trails program to enhance public access along the coast

13. Planning for a Shifting Shoreline

13.1. Adopt and implement strict development/ redevelopment standards within FEMA A and V flood hazard zones and other areas subject to coastal flooding, erosion, and relative sea level rise

13.2. Continue to assist communities in the development of effective Floodplain Management Regulations

14. Managing Local Land Use and Growth

14.1. Develop and implement Local Comprehensive Plans (LSPS) which: 1) direct development into areas in the community capable of absorbing the impacts of growth and its associated facilities, and 2) preserve and protect the community's important natural resources

14.2. Adopt local bylaws and ordinances that promote open space preservation and natural resource protection

14.3. Work with the Massachusetts Highway Department and other transportation agencies to ensure that facilities and infrastructure do not endanger sensitive resource areas

14.4. Work with EOEA and the Massachusetts Bays Program to assist communities in creating Community Development Plans

14.5. Work with EOEA to provide local support and expertise to communities on the Community Preservation Act and facilitate regional links and networking among neighboring communities

14.6. Provide technical assistance to municipalities to adopt and implement plans and bylaws that promote open space preservation and natural resource protection

14.7. Support Conservation Commission Networks (Con Com Networks) in the coastal region by providing technical and management assistance

15. Enhancing Public Education and Participation

15.1. In collaboration with the Executive Office of Environmental Affairs, continue to develop and integrate environmental education as an important component of the curriculum in the public schools of the Commonwealth, making broad use of the Benchmarks for Environmental Education developed by the Secretaries' Advisory Group on Education (SAGEE)

15.2. Continue to work closely with the Department of Education through the Secretaries' Advisory Group on Environmental Education (SAGEE) in order to develop a strategy for the

implementation of the "Benchmarks for Environmental Education" Further, EOEA should continue to place a priority on the role of environmental education and provide adequate staffing to insure that appropriate state leadership is maintained

15.3. In cooperation with the Department of Education, continue to develop a grant relationship with the National Science Foundation and other funding agencies in order to provide technological outreach aimed at enhancing environmental literacy. The goal is to make resource and curriculum materials widely accessible and to provide ongoing coordination among the various members of the education community. The Massachusetts Bays Program represents an important aspect of the total environmental picture and should play a key role in this effort, helping to establish a unified voice to speak for environmental education concerning the Bays region

15.4. Empower exemplary teachers, administrators, and/or schools, who demonstrate the competence, to carry out formal and non-formal environmental education initiatives that complement the Commonwealth's environmental education programs

15.5. Continue and expand its current efforts to build a community of educators who can ably teach about and promote the protection of the Massachusetts Bays, their shores, and watersheds

15.6. Continue to serve as a vehicle for bringing information to and from the government on environmental issues affecting the Bays, with a particular emphasis on proposed projects or regulatory changes

15.7. Continue to provide a public forum for the exchange of information and ideas on CCMP development and implementation among the Bays' business community and resource users

15.8. Continue to offer undergraduate marine science and policy courses; and, through the bi-annual Massachusetts Marine Environment Symposium, bring together diverse marine interests to promote a better understanding of marine policy issues

15.9. Develop and maintain a clearinghouse of NPS education, information, and technical assistance materials, as well as a database of available state NPS materials and programs

15.10. Develop and maintain a matrix, by topic, of NPS education, information, and technical assistance materials produced by state agencies and associated organizations

15.11. Expand upon Massachusetts Bays Program efforts and develop a strategy for NPS outreach and technical assistance statewide that would coordinate the development and production of NPS education, information, and technical assistance materials, and provide technical assistance in order to implement NPS pollution controls

16. Preventing Marine Invasive Species

16.1. In collaboration with the MBP, work with other state agencies and partners to develop a public education program on marine invasive species

16.2. Coordinate with managers and scientists to develop a monitoring strategy for marine invasive species and periodically conduct rapid assessment surveys in coastal resource areas for the presence of marine invasive species

16.3. Work with CZM, MIT Sea Grant, and other parties to develop a monitoring and industry education strategy for pathways for marine invasive species

17. Monitoring the Marine Environment

17.1. In coordination with the MBP, DMF, DEP, BBP, and university scientists, coordinate on the design and implementation of a marine monitoring plan

17.2. Work with the MBP and the BBP to develop and produce a State of the Coast report

17.3. Coordinate with the CZM and the MBP on the implementation of the state and federal Beaches Bills

Appendix C. Progress and Accomplishments, 2003 through 2018 [legal-size pages]

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
1.1	Establish a central clearinghouse program for all beach testing and closure information generated for Massachusetts' coastal public beaches	Department of Public Health	substantial	completed	DPH presented results from their database at the 2015 SOTB Symposium.
2.1	Conduct three Sanitary Survey Training Sessions annually -- one each on the North Shore, Metro Boston/South Shore, and Cape Cod -- to educate local shellfish constables and health officers on the proper techniques for identifying and evaluating pathogen inputs into shellfish harvesting areas	Division of Marine Fisheries	full	discontinued/ deemed obsolete	DMF conducts sanitary surveys on each growing area every 12 years. DMF states (https://www.mass.gov/service-details/learn-about-shellfish-sanitation) that "areas also must have an evaluation every three years along with an annual review," but no information about training is provided.
2.2	Develop and administer a local Shellfish Management Grants Program to help communities finance the development and implementation of effective local shellfish management plans	Division of Marine Fisheries	substantial	discontinued/ deemed obsolete	last mention on mass.gov was 1999
2.3	Continue and expand the Shellfish Bed Restoration Program to restore and protect shellfish beds impacted by nonpoint source pollution	MassBays (with DMF, MACD, NRCS)	moderate	discontinued/ deemed obsolete	MassBays 1997 fact sheet states "while most SBRP projects are still in the early…stages" encouraging early successes included: Scituate BOH enforcement order that opened 400ac in Cohasset Harbor; Quincy installed a tide gate at Wollaston Beach and replaced sewer pipes; MassBays trained citizens to collect "reliable shellfish bed pullution data." A SBR Coordinator was hired in 1998; subequent activities included sewer upgrades in Duxbury. A 2000 report states "There are no cheap, quick fixes to shellfish bed restoration remaining in the [MassBays] area."
2.4	Through the Shellfish Clean Water Initiative (SCWI), complete an Interagency Agreement to define agency roles and contributions to protect shellfish resources from pollution sources	Office of Coastal Zone Management	new		no evidence of this named program online
3.1	Prepare and implement an EOEA - approved Open Space Plan to preserve and protect key wetlands, floodplains, fish and wildlife habitat, and other ecologically- and recreationally-important natural resource areas	Municipalities	substantial	ongoing	EEA's Division of Conservation Services keeps a status list of Open Space and Recreation Plans, but the website version is dated June 2014
3.2	Adopt and implement a local Riverfront District Bylaw to maintain river water quality, preserve fish and wildlife habitat, and protect downstream nursery and shellfish resources	Municipalities	substantial	completed	implemented statewide via the Rivers Protection Act
3.3	Work cooperatively with neighboring communities, EOEA agencies, and other interested parties to develop proactive, long-term Areas of Critical Environmental Concern Management Plans to preserve and protect these vital resource areas	Municipalities	some	ongoing	per ACEC website

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
3.4	Adopt and implement a local Wetlands Protection Bylaw to supplement the state Wetlands Protection Act Regulations	Municipalities	substantial	completed	per MACC, 2006
3.5	Prepare and implement ecosystem-based Barrier Beach Management Plans to promote responsible use and protection of these critical coastal resources	Municipalities	moderate	discontinued/ deemed obsolete	No progress (other than delineation) reported since the publication of Guidelines for Barrier Beach Management in 1994. (http://www.mass.gov/eea/docs/czm/stormsmart/beaches/barrier-beach-guidelines.pdf)
3.6	Employ full-time, professionally-trained conservation staff to provide ongoing technical and administrative support to local Conservation Commissions	Municipalities	moderate	ongoing	Over 100 Commissions have permanent full-time employees, many of whom are conservation professionals providing invaluable support to volunteer Commissioners. More than half of Conservation Commissions have some level of staffing.
3.7	Continue to develop Resource Management Plans for all DCR-owned coastal properties	Department of Conservation and Recreation	substantial	ongoing	as of June 2015, 18 sites management plans have been adopted, two of those are coastal properties. Two additional coastal property plans are in development as of 1/16
3.8	Develop and promote the use of river basin planning reports to facilitate responsible water resources planning and management at the local and regional levels	Department of Conservation and Recreation	some	completed	DEP and DCR directs and consults with municipalities to develop comprehensive water resource management plans, required for SRF funding and other state assistance.
3.9	Acquire and restore undeveloped coastal properties that offer outstanding living resources habitat and public recreation opportunities	Department of Conservation and Recreation	some	ongoing	Land trusts and other nonprofits continue to acquire coastal properties; CZM is advising re: facilitating salt marsh migration due to sea level rise.
3.10	Complete the statewide inventorying and mapping of coastal and inland wetlands, and provide local Conservation Commissions with: 1) accurate base maps depicting wetland boundaries, and 2) instruction on proper wetland map interpretation and use	Department of Environmental Protection	substantial	completed	http://maps.massgis.state.ma.us/images/dep/omv/wetviewer.htm
3.11	In collaboration with the Riverways Program, prepare an up-to-date inventory of anadromous fish runs in the Massachusetts Bays region and develop a strategy to prioritize, restore, and maintain these runs	Department of Fish and Game	substantial	completed	http://www.mass.gov/eea/agencies/dfg/dmf/programs-and-projects/anadromous-fish-restoration.html
3.12	In collaboration with the Riverways Program, develop and implement a citizen-based Fishway Stewardship Program to restore and maintain anadromous fish runs along the Massachusetts Bays coast	Department of Fish and Game	substantial	ongoing	Division of Marine Fisheries maintains fish migration data collected by volunteers. MassBays funded establishment of the River Herring Network (riverherringnetwork.com).
3.13	Continue the Wetlands Restoration Program to restore and protect degraded coastal and inland wetlands	Executive Office of Energy and Environmental Affairs	substantial	ongoing	Corporate Wetlands Restoration Program works primarily with the Division of Ecological Restoration.
3.14	Continue and expand current efforts to support eelgrass habitat protection and restoration in Massachusetts and Cape Cod Bays	U.S. EPA, National Marine Fisheries Service, U.S. Army Corps of Engineers	substantial	ongoing	ongoing, see conservation mooring implementation, 2014 ACOE GP
3.15	Work with CZM to develop scientific methods for assessing the ecological integrity of coastal wetlands and to train volunteers in data collection	MassBays National Estuary Program	new	ongoing	program sits with CZM, MassBays RSPs participate

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
4.1	Adopt subdivision regulations that require the incorporation of stormwater runoff best management practices (BMPs) into all new development plans	Municipalities	some	completed	Nearly all Massachusetts municipalities must document application of BMPs for stormwater under MS4 permits.
4.2	Implement best management practices to mitigate existing stormwater discharges that are causing or contributing to the closure of shellfish harvesting areas and swimming beaches	Municipalities	moderate	ongoing	some slow-down due to delay in MS4 permitting
4.3	In collaboration with Regional Planning Agencies, Natural Resources Conservation Service/MassCAP (formerly US Soil Conservation Service), and Massachusetts Coastal Zone Management Office, should: 1) disseminate its Nonpoint Source Management Manual and Urban Best Management Practices for Massachusetts, and 2) sponsor public workshops to educate local officials about best management practices and performance standards for controlling stormwater runoff	Department of Environmental Protection	substantial	ongoing	CZM is launching a new initiative with the MS4 permit
4.4	Develop a coordinated and streamlined regulatory system within DEP to assure effective implementation of the stormwater components of the Massachusetts Clean Water Act, Wetlands Protection Act, and Federal Stormwater Program (Federal Clean Water Act, Sections 401 and 402)	Department of Environmental Protection	substantial	unknown	
4.5	Reduce stormwater pollution in the Massachusetts Bays watersheds through: (a) technical assistance to communities in developing comprehensive stormwater management programs; and (b) National Pollutant Discharge Elimination System (NPDES) compliance for industrial stormwater dischargers Targeted areas are the lower Charles River for the stormwater management programs and the Neponset River for the industrial stormwater dischargers	U.S. Environmental Protection Agency	substantial	completed	EPA has shifted its focus to other rivers, e.g., Mystic; industrial discharges are subject to the 2015 Industrial Stormwater Multisector General Permit. (https://www.epa.gov/npdes/final-2015-msgp-documents)
4.6	Prepare an Environmental Manual to complement the Highway Design Manual and provide for the integration of environmental concerns (including stormwater management) into all phases of highway project planning, design, construction, and maintenance	Department of Transportation	some	ongoing	MassDOT Environmental Services Division in place, annual reporting to EPA re: NPDES permit compliance is up-to-date (http://www.massdot.state.ma.us/highway/Departments/EnvironmentalServices/StormwaterManagementUnit/NationalPollutantDischargeEliminationSystem.aspx). 2006 Project Development and Design Guide (http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms/ProjectDevelopmentDesignGuide.aspx) includes runoff and drainage aspects (Chapter 8), but do not appear to be applied consistently.
4.7	As part of its forthcoming pollution prevention plan, develop a Stormwater Pollution Mitigation Program to identify, prioritize, and correct existing stormwater pollution problems associated with state highway drainage facilities	Department of Transportation	moderate	completed	sustainability plan published 2006, implemented by MassDOT Environmental Services Division's Environmental Management Systems and Sustainability Unit

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
4.8	Sponsor annual workshops to train local public works personnel on the proper use of stormwater runoff best management practices	Department of Transportation and Department of Conservation and Recreation	substantial	ongoing	via Bay State Roads
4.9	Require the use of on-site stormwater best management practices as a precondition to the permitting of private property tie-ins to state drainage facilities	Department of Transportation	some	completed	http://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/ma/reports/2012/MassDOT12.pdf
4.10	Develop and implement stormwater management plans for compliance with Phase II NPDES regulations	Municipalities	new	ongoing	updated MS4 permit in draft form
4.11	Provide technical assistance for developing and implementing non-structural Best Management Practices, support efforts to create local stormwater utilities, provide grant writing support to municipalities for implementing the stormwater policy, Phase II requirements, and resource protection efforts, and support the efforts of DEP and CZM to revise and update the stormwater policy	MassBays National Estuary Program	new	ongoing	
5.1	Adopt and implement the following set of regulations to ensure the safe use, storage, and disposal of toxic and hazardous materials: 1) Toxic and Hazardous Materials Regulation, 2) Underground Storage Tank Regulation, 3) Commercial/Industrial Floor Drain Regulation	Municipalities	substantial	unknown	
5.2	Establish Household Hazardous Waste Collection Programs for difficult-to-manage hazardous products to ensure their proper disposal on a regular basis	Municipalities	substantial	completed	
5.3	In collaboration with the Department of Environmental Protection, develop and offer continuing education courses on hazardous materials management to create a pool of trained "HazMat Specialists" at the local level	Department of Education	some	ongoing	online resources hosted by DEP
5.4	Form partnerships to facilitate the safe management of hazardous products, emphasizing reduced products use and recycling wherever possible	Executive Office of Environmental Affairs	substantial	ongoing	program funding reduced
5.5	Reduce and prevent toxic pollution through targeted National Pollutant Discharge Elimination System (NPDES) permitting of significant discharges in the Massachusetts Bays; in particular, oil tank farms on Chelsea Creek and the Island End River	U.S. Environmental Protection Agency	full	completed	per http://www.epa.gov/region1/npdes/mass.html
5.6	Continue to perform on-site assessments and provide instructional materials to help businesses and industries in the Massachusetts Bays region reduce the use of toxic substances	Office of Toxics Use Reduction	substantial	ongoing	ongoing

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
6.1	Establish and promote the use of Used Motor Oil Collection Facilities to ensure the proper collection and disposal of used motor oil from do-it-yourself oil changes	Municipalities	substantial	completed	point-of-sale return, municipal drop-off
6.2	In collaboration with the US Coast Guard, EPA, and NOAA, implement the Policy on the Use of Oil Spill Chemical Countermeasures (Dispersants) to protect coastal resources from the adverse effects of oil spills	Department of Environmental Protection	full	completed	SPCC plans required
6.3	In collaboration with other federal, state, and local agencies, continue to update and implement the Massachusetts coastwide Area Contingency Plans to assure a rapid and effective response to discharges of oil and other hazardous substances into the marine environment	U.S. Coast Guard	substantial	completed	uploaded 4/2014 to http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/massachusetts-contingency-plan.html
7.1	In collaboration with other state and federal agencies, continue to implement the Ocean Sanctuaries Act by closely monitoring all facilities plans which propose increased wastewater treatment plant discharges into an ocean sanctuary	Department of Conservation and Recreation	substantial	ongoing	addressed through Ocean Planning
7.2	Support the control of combined sewer overflows in the Massachusetts Bays watersheds, especially the lower Charles River, and target National Pollutant Discharge Elimination Systems (NPDES) permitting to implement technology and water quality-based requirements in the Merrimack River watershed	U.S. Environmental Protection Agency	full	completed	Reduction of CSO in Charles River 1998-present from 1742 million gallons to 13 million gallons.Completion (Dec 2015) of construction under the MWRA's Long-Term Control Plan reduced total CSO discharge volume in a typical rainfall year by approximately 88%. Nearly all (93%) of the remaining discharge volume is treated at MWRA's 4 CSO treatment facilities. See http://www.mwra.com/annual/csoar/2015/2015csoar-r3.pdf
7.3	Work collaboratively to develop and implement an effective program for monitoring and enforcing point source discharges from wastewater treament plants and energy-producing facilities	U.S. Environmental Protection Agency, Executive Office of Energy and Environmental Affairs, Department of Environmental Protection, and Office of Coastal Zone Management	moderate	ongoing	Monitoring under NPDES permits is consistent.
7.4	In cooperation with UMass, EOEA, CZM, and MassBays, analyze and determine the Total Maximum Daily Loads (TMDLs) of nitrogen for coastal embayments and develop management plans for wastewater treatment facilities to adapt to these new standards	Department of Environmental Protection	new	ongoing	only a few finalized in Mass Bay & Cape Cod Bay

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
7.5	Identify resource areas sensitive to wastewater and develop management plans appropriate to these areas, focusing on the capacities of natural systems to assimilate wastewater	Municipalities	substantial	ongoing	especially Cape Cod 208 plan
7.6	In cooperation with DEP, develop and implement regular inspection and maintenance (I/M) programs for on-site wastewater systems	Municipalities	substantial	revised	Title 5 only addresses issue at change-of-title
7.7	Employ full-time, professionally-trained public health staff to provide ongoing technical and administrative support to the local Boards of Health	Municipalities	substantial	ongoing	reduced funding, see 2006 publication: http://www.mphaweb.org/resources/strength_lph_6_06.pdf
7.8	Establish a Title 5 and alternative systems technical assistance program directed to local Boards of Health and health agents, systems engineers/ installers, and homeowners	Regional Planning Agencies	substantial	ongoing	Barnstable County testing facility
7.9	Evaluate and build upon the centralized statewide repository for testing information on alternative technologies, to be established as part of the Buzzards Bay Project's two-year Environmental Technology Initiative Project	Department of Environmental Protection	full	completed	DEP alternatives certification program
7.10	Plan for decentralized wastewater management and treatment	Multiple	full	ongoing	not sure how this is listed as "full" in 1998?
8.1	Work cooperatively with neighboring communities, private boatyards and marinas, and state agencies (DFG and CZM) to establish, promote, and maintain Boat Pumpout Programs in targeted embayment areas	Municipalities	full	completed	No-discharge zones were approved in 2014 for the entire Massachusetts coast, which requires pumpout sites (https://www.mass.gov/service-details/no-discharge-zones-ndzs). EPA issued Vessel General Permit (https://www.epa.gov/npdes/vessels-vgp) in 2013 and Small Vessel General Permit (https://www.epa.gov/npdes/vessels-svgp) in 2014.
8.2	With assistance from CZM and DEP, require private boatyards and marinas to implement effective stormwater runoff control strategies which include the use of pollution prevention measures and the proper design and maintenance of hull servicing areas	Municipalities	some	ongoing	Stormwater pollution (drains) from boatyards is covered by the EPA's industrial stormwater MSGP, (SECTOR R: SHIP AND BOAT BUILDING AND REPAIRING YARDS). Sheet stormwater runoff is not covered. (https://www.epa.gov/npdes/final-2015-msgp-documents) CZM provides technical assistance re: the General Permit and stormwater control best practices.
9.1	Continue to monitor dredged material disposal sites in the Massachusetts Bays region and initiate the planning necessary to begin a capping demonstration project at the Massachusetts Bay Disposal Site	U.S. Army Corps of Engineers	substantial	ongoing	A pilot project (Cohasset Harbor Capping Project) was conducted in 1998 to 2000 with clean sediment to determine whether capping is feasible at this deep water site. Extensive monitoring has indicated that the capping project was successful in isolating underlying sediment
9.2	Coordinate the development of a comprehensive Dredging and Dredged Materials Disposal Plan to improve and maintain access to the Commonwealth's ports, harbors, and channels, and to minimize adverse impacts to the marine environment	Executive Office of Energy and Environmental Affairs	substantial	completed	completed 2004

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
10.1	Work cooperatively with the Massachusetts Coastal Zone Management Office (CZM), neighboring communities, and waterfront users to design and implement Beach and Marine Debris Reduction Programs	Municipalities	some	ongoing	see: Coastsweep
11.1	Strengthen Massachusetts Water Quality Standards to enhance and protect nitrogen-sensitive coastal embayments	Department of Environmental Protection	some	ongoing	Only one wastewater treatment facility in MassBays (Cohasset) has a permitted limit for Nitrogen; others have "monitor only" requirements.
11.2	Work collaboratively to expand upon current Massachusetts Bays Program efforts to identify nitrogen-sensitive embayments, determine critical loading rates, and recommend actions to manage nitrogen so as to prevent or reduce excessive nitrogen loading to coastal waters and groundwater	Regional Planning Agencies, Department of Environmental Protection, Municipalities	some	ongoing	
12.1	Develop and implement Municipal Harbor Plans which: 1) promote marine-dependent waterfront uses, 2) enhance public access to the water, and 3) protect habitat of shellfish and other living resources	Municipalities	substantial	ongoing	CZM is the lead agency on this effort. (https://www.mass.gov/service-details/czm-port-and-harbor-planning-program-municipal-harbor-plans)
12.2	Enhance the Designated Port Area (DPA) program with new planning and promotional initiatives	Office of Coastal Zone Management	substantial	completed	https://www.mass.gov/service-details/czm-port-and-harbor-planning-program-designated-port-areas
12.3	Establish a new technical assistance program to accelerate municipal efforts to identify and legally reclaim historic rights-of-way to the sea	Office of Coastal Zone Management	full	completed	handbook published 1999
12.4	In collaboration with the Department of Conservation and Recreation and MassGIS, prepare and distribute a statewide Coastal Access Guide to facilitate public access to the shoreline	Office of Coastal Zone Management	some	completed	https://www.mass.gov/service-details/coast-guide-online
12.5	In collaboration with coastal municipalities, develop and implement an Access-Via-Trails program to enhance public access along the coast	Executive Office of Environmental Affairs	some	completed	directory of coastal trails

Task	Description	Lead Agency	Status* as of 1998 (new = 2003 CCMP)	Status as of 2018	Notes/documentation
13.1	Adopt and implement strict development/ redevelopment standards within FEMA A and V flood hazard zones and other areas subject to coastal flooding, erosion, and relative sea level rise	Municipalities	moderate	ongoing	new standards in negotiation among state agencies
13.2	Continue to assist communities in the development of effective Floodplain Management Regulations	Department of Conservation and Recreation	moderate	ongoing	CZM developed and promotes a model bylaw; 13 communities have surpassed those standards
14.1	Develop and implement Local Comprehensive Plans (LSPS) which: 1) direct development into areas in the community capable of absorbing the impacts of growth and its associated facilities, and 2) preserve and protect the community's important natural resources	Municipalities	substantial	ongoing	Municipalities in Massachusetts are required to have comprehensive Open Space plans as a condition for receiving state environmental funding. Further, the state passed enabling legislation, the Community Preservation Act, which incorporates this information for planning.
14.2	Adopt local bylaws and ordinances that promote open space preservation and natural resource protection	Municipalities	new	ongoing	The Community Preservation Act passed in 2000, and has been adopted by 30 of the 50 MassBays coastal municipalities
14.3	Work with the Massachusetts Highway Department and other transportation agencies to ensure that facilities and infrastructure do not endanger sensitive resource areas	Regional Planning Agencies	new	unknown	
14.4	Work with EOEA and the Massachusetts Bays Program to assist communities in creating Community Development Plans	Regional Planning Agencies	new	ongoing	build-out scenarios shared, smart growth initiative established
14.5	Work with EOEA to provide local support and expertise to communities on the Community Preservation Act and facilitate regional links and networking among neighboring communities	MassBays National Estuary Program	new	ongoing	community preservation act passed in a majority of MassBays communities (http://communitypreservation.org/content/map) but no regional links or networking evident
14.6	Provide technical assistance to municipalities to adopt and implement plans and bylaws that promote open space preservation and natural resource protection	MassBays National Estuary Program	new	ongoing	RSPs carry out this effort incidentally to MassBays initiatives
14.7	Support Conservation Commission Networks (Con Com Networks) in the coastal region by providing technical and management assistance	Office of Coastal Zone Management	new	discontinued/ deemed obsolete	This program was discontinued with a staff departure, though some regions continue to be engaged by MassBays.

Appendix D. 2005-2008 Strategic Plan Progress Report

CS: Central Staff, UNS:Upper North Shore, SS: Salem Sound, MB: Metro Boston, SoS: South Shore, CC: Cape Cod

I. Produce significant environmental results in the MBP region.	**Regional and Sub-regional Progress to Date**						**Yearly Goals Achieved**	
	CS	**UNS**	**SS**	**MB**	**SoS**	**CC**	**Total Possible**	**Progress to Date**
Goal 1: Protect and Enhance Shellfish Resources (from Action Plan 2)								
1.a. Provide update on shellfish landings indicator in 2009 State of the Bays report								
1.b. Provide assistance as required by the Division of Marine Fisheries to communicate red tide information to the public and partner organizations	**X**							**X**
1.b. With MIT Sea Grant, coordinate an HAB regional workshop	**X**							**X**
Subtotal	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**2**
Goal 2: Protect and Enhance Coastal Habitat (from Action Plan 3)								
2.a.Target five towns each year for technical and grant-writing assistance to complete an Open Space Plan, local Wetlands Bylaw and other habitat protection tools. (O)	**X**	**X**	**X**		**X**	**X**		**X**
2.b. Update the Wetlands Health Assessment Toolbox manual (December 2008). (I)								
2.b. Maintain the number of trained volunteers and local officials each year in the Wetlands Health Assessment Toolbox program; apply for funding to expand WHAT into another sub-region; gather data and contribute to the Gulf of Maine database. (O)	**X**	**X**	**X**			**X**		**X**
2.c. Initiate three wetlands restoration priority efforts based on inventory of tidally restricted wetlands. (I)	**X**	**X**			**X**	**X**		**X**
2.d. Develop and complete one ACEC Management Plan in Mass. Bays region. (I,C)		**X**				**X**		**X**
2.f. Develop standard procedures for emerging phragmites data gathering and management. (O)		**X**				**X**		**X**
2.f. Initiate an inventory of restoration opportunities of degraded habitat/emerging phragmites in another subregion (Upper North Shore inventory already under way) (O)			**X**					**X**
2.g. Initiate five anadromous fish/river restoration and/or monitoring projects. (I)		**X**	**X**		**X**	**X**		**X**
2.h. Develop indicators to measure river restoration success. (I)	**X**							**X**
2.h. Ensure Massachusetts Gulf of Maine Program grantees with successful implementation of funded projects. (O)	**X**					**X**		**X**
2.j. Continue field testing and verification for bioindicators project.								
Subtotal	**5**	**6**	**4**	**0**	**3**	**7**	**11**	**9**

I. Produce significant environmental results in the MBP region.	Regional and Sub-regional Progress to Date						Yearly Goals Achieved	
	CS	UNS	SS	MB	SoS	CC	Total Possible	Progress to Date
Goal 3: Reduce and Prevent Stormwater Pollution (from Action Plan 4)								
3.a. Target ten municipalities each year to provide technical assistance and grant writing support for implementing the stormwater policy, Phase II requirements, and resource protection efforts, including ensuring stormwater mitigation in development and redevelopment plans. (O)		X	X		X	X		X
3.b. Provide workshops or other technical assistance to train local officials on the implementation of the DEP Stormwater Policy and on Stormwater Phase II requirements. (O)			X			X		X
3.c. Facilitate feasibility analysis for stormwater utility, create information exchange, and develop a model bylaw. (I)		X				X		X
3.e. Assist in grant writing to fund environmental analyses and stormwater projects. (O)						X		X
3.f. Revise and update the stormwater policy (June 2006). (I)	X							X
3.h. Complete series of stormwater print ads; create a Think Blue website; create a Think Blue pitchkit for funders and partners; develop point-of-purchase displays (POP's). (O)	X	X			X			X
3.i. Initiate a local television weather forecaster partnership to communicate stormwater information and tips to viewers. (I)	X							X
3.i. Organize and hold a Think Blue kickoff event (May 2006); organize local community Think Blue events (to create support for stormwater utilities); and complete a follow-up telephone survey after year one of campaign. (O)	X		X		X	X		X
3.j. Assist two towns with GIS mapping of their storm drain systems.	X							X
3.k. Develop Greenscapes outreach materials, pilot demonstration sites, provide training and workshops, and draft model bylaws. (O)		X	X		X			X
3.l. Expand Greenscapes program to one additional MBP region (C)		X	X					X
Subtotal	**5**	**5**	**5**	**0**	**4**	**5**	**11**	**11**

I. Produce significant environmental results in the MBP region.	Regional and Sub-regional Progress to Date						Yearly Goals Achieved	
	CS	UNS	SS	MB	SoS	CC	Total Possible	Progress to Date
Goal 4: Manage Municipal Wastewater (from Action Plan 7):								
4.b. Provide technical assistance to local officials toward development of wastewater management plans. **(O)**						X		X
4.c. Provide workshops and technical assistance to local Boards of Health, health agents, systems engineers/installers, and homeowners regarding on-site wastewater challenges. **(O)**						X		X
4.e. Designate two No Discharge Zones within the Mass. Bays region.			X		X	X		X
Subtotal	**0**	**0**	**1**	**0**	**1**	**3**	**3**	**3**
Goal 5: Manage Local Land Use and Growth (from Action Plan 14):								
5.a. Hold regular workshops and provide networking opportunities to municipalities regarding locally implementable smart growth tools, including bylaws. (O)		X	X		X	X		X
5.c. Hold, attend regular meetings of existing North Shore, Urban, South Shore, and Cape Cod municipal networks (Conservation Commission Networks, DPWs, Boards of Health, CPC). (O)		X	X		X	X		X
Subtotal	**0**	**2**	**2**	**0**	**2**	**2**	**2**	**2**
Goal 6: Prevent Marine Invasive Species (from Action Plan 16)								
6.a. Seek funding to develop a monitoring strategy and conduct a rapid assessment in coastal resource areas for the presence of invasive species. *(first assessment held in 2003, next in July 2007)* (C)	X				X	X		X
6.b. Support a monitoring strategy for new and existing vectors within water-based industries (2003). (O)	X							X
6.c. Develop and distribute public education material on invasive species *(completed and ongoing)*. (O,C)			X			X		X
6.d. Manage data collected by volunteers; maintain number of invasive species monitoring volunteers. (O)	X		X		X	X		X
Subtotal	**3**	**0**	**2**	**0**	**2**	**3**	**4**	**4**

I. Produce significant environmental results in the MBP region.	**Regional and Sub-regional Progress to Date**						**Yearly Goals Achieved**	
	CS	**UNS**	**SS**	**MB**	**SoS**	**CC**	**Total Possible**	**Progress to Date**
Goal 7: Monitor Marine Waters (from Action Plan 17):								
7.a. Identify and hold gatherings of coastal partners to develop a state marine waters monitoring plan (O)	**X**					**X**		**X**
7.a. Provide a summary of NPDES data – flow and nutrients synthesis report.								
7.b. Review and revise indicator list and publish in a second State of the Bays report (To be completed in 2009) (I)	**X**					**X**		**X**
7.c. Work with EPA, CZM and New England NEPs to conduct research on coastal condition indicators; Produce white papers on research of coastal condition indicators (I)	**X**							**X**
7.d. Develop embayment monitoring process and Implement in two embayments. (I)	**X**				**X**			**X**
7.e. Submit recommendations to EPA to refine the Coastal Conditions report. (C)	**X**							**X**
7.g. Complete a white paper on public health and environmental quality links with assessment and options.								
Subtotal	**5**	**0**	**0**	**0**	**1**	**2**	**7**	**5**
Total							***40***	***36***

II. Build organizational sustainability for the Massachusetts Bays Program.	**Regional and Sub-regional Progress to Date**						**Yearly Goals Achieved**	
	CS	**UNS**	**SS**	**MB**	**SoS**	**CC**	**Total Possible**	**Progress to Date**
Goal 1: Strengthen the identity and influence of the MBP.								
1.a. Begin preparations for 2009 State of the Bays symposium and report by preparing updates on indicators. (I)	**X**					**X**		**X**
1.b. Explore feasibility and structure of regional coastal protection workshops by 2008.	**X**							**X**
1.c. Develop clear, simple "messages" and promote through projects described in an annual Communications and Outreach Plan. (I, O)	**X**							**X**
1.d. Conitnue to develop and distribute a current, appealing portfolio of outreach materials. (O, I)	**X**	**X**	**X**		**X**	**X**		**X**
1.d. Continue to update the MBP constituency mailing list. (O)	**X**					**X**		**X**
1.e. Announce recipient of Stephen Gersh award every two years in appreciation of a local volunteer (2006 and 2008). (O)	**X**							**X**
Subtotal	**6**	**1**	**1**	**0**	**1**	**3**	**6**	**6**
Goal 2: ***Identify and pursue alternative funding.***								
2.a. Partner with at least two non-EPA funding sources for MBP Strategic Focus and Funding Zone areas annually. (O)	**X**	**X**	**X**	**X**	**X**	**X**		**X**
2.a. In 2006, work with MBEA in seeking non-EPA sources to maintain funding for MBP Strategic Focus and Funding Zone areas. (O)	**X**							**X**
2.c. Develop MBEA strategic plan and MOU with Mass. Bays Program (C)	**X**							**X**
Subtotal	**3**	**1**	**1**	**1**	**1**	**1**	**3**	**3**
Goal 3: ***Ensure effectiveness of MBP structure for managing implementation*****.**								
3.a. Restructure to three Management Committee meetings per year (one for regional accomplishments/issues; one for MBEA and annual planning; and one for a pressing Mass. Bays issue). (C)	**X**							**X**
3.b. Continue to identify changes needed to move from planning to management of implementation. (O)						**X**		**X**
3.b. Continue to develop proposed improvements to structure to strengthen local implementation efforts. (O)	**X**					**X**		**X**
Subtotal	**2**	**0**	**0**	**0**	**0**	**2**	**3**	**3**
Total							***12***	***12***

Appendix E. Results of Regional Meetings

Massachusetts Bays Program
251 Causeway Street, Suite 800, Boston, MA 02114
(617) 626-1230 / Fax (617) 626-1240
www.massbays.org

Dear Mass Bays Partners: October 2013

This past June and July, Mass Bays staff and regional coordinators were fortunate to meet with you to hear your priorities and needs for our coastal natural resources. Since then, we've been compiling results of our conversations and drawing parallels and distinctions among the five sub-regions that make up the Massachusetts Bays National Estuary Program. This letter is to summarize what we heard in individual meetings, as well as the take-away messages repeated from meeting to meeting. Skip to the end of this letter to see our next steps, informed by your important comments.

Cross-region themes

- Mass Bays' mission and vision are not specific enough to provide direction to the work.
  We have draft vision and mission statements based in part on your input. While our vision is shared with many of you and other coastal organizations, our mission describes how the Mass Bays Program, uniquely, works toward that vision.

  Vision: We envision a network of healthy and resilient estuaries, sustainable ecosystems that support the life and communities dependent upon them.

  Mission: The Massachusetts Bays Program is an EPA National Estuary Program dedicated to protecting, restoring, and enhancing the estuarine ecosystems of Massachusetts and Cape Cod Bays. We facilitate partnerships to prompt local, state, and federal action and stewardship, convening stakeholders on the local and regional level, providing scientific basis for management decisions, and educating decisionmakers about problems and solutions.

- Mass Bays' strength lies in convening stakeholders and facilitating partnerships. That work should continue.
- Estuarine natural resources – salt marshes, beaches, sea grass, shellfish beds – are variously and often inconsistently managed on the local level.
- Education and outreach about the role of estuarine resources in resilient coastal systems – their ecosystem values – are still needed for multiple audiences.
- Coastal communities need concrete advice for practical, ready-to-implement adaptations to climate change and sea level rise.

Cross-cutting needs

At each regional network meeting (and in the Cape Cod regional survey), we asked partners and stakeholders to highlight their primary concerns for their region, drawing from a list of past CCMP priorities, everything from expanding coastal monitoring to restoring benthic habitat. The interconnected nature of these issues was evident as stakeholders expressed difficulty in choosing just one topic as their primary concern. Suggestions for action that will have cascading benefits to estuarine systems, applicable across the Mass Bays planning area, include:

- Implement improved stormwater management – especially through municipal utilities and MS4 plans – that will reduce impervious surface and prevent nutrient and bacterial loading at the source. Reduced inputs will enhance and restore marshes, benthic habitat, eelgrass beds, and shellfish beds, and support diadromous and anadromous fish runs.

- Encourage regional collaboration for planning and implementing climate change adaptation responses, for example providing practical guidance and technical support to plan for sea level rise with regard to stormwater infrastructure.
- Encourage cross-agency cooperation and planning for restoration projects, tying individual projects to the larger ecosystem's health and facilitating early input to project plans from local stakeholders.
- Determine/compile the state-of-knowledge of the benefits provided by coastal habitats – e.g., shellfish for nutrient and bacteria removal, salt marshes for flood mitigation – and make the case to local decisionmakers for protecting, restoring, and enhancing those resources.

Habitat-specific actions
Discussions reinforced the fact that while Mass Bays' sub-regions have unique characteristics and needs. However, estuarine habitats across the planning area would benefit from specific actions, for example:

- Remove all traditional moorings from eelgrass beds.
- Restore shellfish beds, taking into consideration the impacts of ocean acidification.
- Encourage beach management plans that consider habitat value.
- Model potential for marsh migration in response to sea level rise.

Each of these actions require groundwork to determine which agencies have existing authority and policies, compile maps, collect and compile monitoring data, and coordinated planning and implementation that take into account the cross-cutting needs identified above. Mass Bays' role going forward will be informed by our mission, with fluid prioritization of efforts that reflect current scientific understanding, political readiness, and availability of resources.

Next steps
Your contributions over this past summer have moved us a good way toward meeting our first two goals. This document is not the end point of our work, and we continue to process your and others' input as we look for opportunities to add to, rather than duplicate, efforts already underway or planned. Meanwhile, our next steps include:

- Soliciting additional input from stakeholders not already at the table, including academia, local elected officials, water-based industry, and region-wide nonprofits.
- Convening partners at the state and regional level to determine how Mass Bays can contribute most effectively to a common vision of resilient coastal ecosystems.
- Identifying ways to measure Mass Bays' impact at multiple scales.
- Drafting a CCMP for stakeholder and EPA review.

Thank you again for your commitment to Massachusetts and Cape Cod Bays. The Mass Bays National Estuary Program is only as strong as your continuing support of our mission. Please be sure to sign up for our e-newsletter (http://www.mass.gov/eea/agencies/mass-bays-program/whats-new/), stay in touch with your regional coordinator listed below, and keep your eyes on our website (www.massbays.org) for updates on how you can take part.

Sincerely,

Pam DiBona
Executive Director

Appendix F. Results of Stakeholder Interviews

Memo

To: Pam DiBona & Prassede Vella
From: Joshua Wrigley
Date: May 5, 2014
Re: Stakeholder Scoping Initiative

Purpose & Background

This memo contains the results of the 2014 winter scoping exercise that sought to gather individual perspectives from stakeholders in the five regions of the Massachusetts Bays NEP (MassBays). In preparation for redrafting the Comprehensive Conservation and Management Plan (CCMP), MassBays convened stakeholder meetings during June and July of 2013 on the Upper North Shore, Salem Sound, Metro Boston, and the South Shore. Additionally, feedback from Cape Cod was gathered through a survey. During that time, stakeholders involved in coastal and watershed conservation lent their views regarding a list of top priority concerns that included storm water, wastewater, invasive species, water monitoring, and other associated topics.

Desiring to sift the regions for perspectives that may have been missed in the meetings of already-engaged stakeholders, the 2014 follow-up scoping effort focused on personal interviews with professionals and citizens ("narrators") otherwise involved in local decision making around coastal natural resources. In many cases, these interviews have bolstered the 2013 findings and have helped in further determining the unique characteristics of individual locations whose issues fall under the broader penumbrae of previously articulated concerns. The findings in this round of outreach included highly specific regional observations that spoke to the uniqueness of given areas and their individual environmental, regulatory, economic, and sometimes geomorphological characteristics. These scoping interviews convey the personal perspectives of each narrator in a manner that identifies their specific concerns and subjective views regarding the state of their coastal resources.

For a complete list of participating agencies and organizations, see Appendix I.

Background

Objective: The current CCMP, revised in 2003, contains seventeen action plans and corresponding Action Items. As MassBays revises the document in 2014, there is a significant need for stakeholder input that accurately reflects the state of the MassBays estuarine environment and the challenges that it faces. The process of revision has been guided by the following Outputs and Short-term Outcomes:

CCMP Revision Process Outputs & Short-term Outcomes

- MassBays vision to inform program and regional priorities
- Identified target audiences for MassBays education and outreach
- In all regions, re-engaged existing partners; new partners recruited
- Specific regional and region-wide priorities
- Up-to-date understanding of Massachusetts Bay, resources, and complementary programs
- CCMP scope focused on priorities, informed by capacity
- Education and outreach to target audiences

- Dynamic, realistic, performance-based guidance re: MassBays issues
- Time-bound (5-8 years), strategic CCMP

In support of these goals, the 2014 scoping interviews have sought to "conduct a…fact-finding mission to identify and compile data on issues of concern that have not already been voiced by currently engaged participants." In this second phase, one of MassBays' priorities now is to attain an up-to-date understanding of the Massachusetts Bays region and of its communities. By interviewing community leaders who by extension of their office or personal interest could offer an informed perspective on the coastal environment, the interviews have tried to establish a relationship between place and environmental issue. In addition to the purpose of data collection for the CCMP, this scoping campaign has intended to establish a base of information that may inform future collaborative considerations as MassBays continues to forge partnerships with neighboring agencies, nonprofits, research institutions, and municipalities.

The scoping interviews are especially useful for designing pathways toward process outcomes that are responsive to constituent needs. As a supplement to the outreach work already in progress by MassBays' Regional Coordinators, this scoping campaign has intended to enlarge the existing base of knowledge by establishing a rich repository of background information useful for gauging the general concerns of future potential partners.

Previous Findings

Results of 2013 Scoping Meetings (Issues Ranked by Priority Highest to Lowest)

North Shore	Salem Sound	Metro Boston	South Shore	Cape Cod
Invasive Species	Monitoring	Storm water	Climate Change	Storm water
Land Use	Storm water	Nutrient Loading	Sea Level Rise	Wastewater
Sea-level Rise	Climate Change/Sea Level Rise	Wastewater	Nutrient Loading	Salt Marshes
Outreach	Outreach	Land Use Planning	Seagrass	SLR/CC
Climate Change	Land Use Planning	Shellfish	Saltmarsh	Storm water
Salt Marshes	Shellfish	Monitoring	Shellfish	Shellfish
Sedimentation	Eelgrass	Salt Marshes	Land Use Planning	Land Use Planning
Nutrient Loading	Wastewater	Benthic	Anadromous Fish	Benthic Monitoring
Storm Water	Salt Marshes	Climate Change/Sea Level Rise	Wastewater	Eelgrass
Holistic Restoration	Reducing Bacteria	Eelgrass	PR	Anadromous Fish
	Anadromous Fish	Anadromous Fish	Storm water	Sediment Budgets
	Invasive Species			
	Nutrient Loading			
	Working with other Organizations			

Methodology

The scoping process followed a stepwise methodology:

a. Generate questions suggested by the literature review and report produced by the Urban Harbors Institute. E.g., What specific contributions can MassBays offer, and where? In what arenas/topics would MassBays' efforts be most helpful?
b. Create a list of possible participants and interviewees, prioritize the list by region, schedule in-person and phone meetings, in cooperation with MassBays Regional Service Providers.
c. Compile existing outreach materials (repackage as necessary) about MassBays' CCMP process to send out to stakeholders who may not know about MassBays and our mission.
d. Manage discussions with MassBays abilities and priorities in mind to identify areas of potential impact.
e. Conduct conversations across the region and collect notes in a central spreadsheet.

Through consultation with MassBays' Regional Coordinators, the 2014 scoping initiative began with the establishment of a list of potential contacts that included individuals from town governments, restoration specialists, advocates, business owners, and others who are engaged directly or peripherally with the coastal resources of the MassBays region.

The design of this scoping attempt has relied on the relative nature of personal opinions insofar that they can supply a strong contextual background for consideration of MassBays' own mission and goals. Using a semi-structured approach, the interviewer asked open ended questions that sought to explore themes central to the CCMP revision process. Three elements contributed to the interview structure including (1) the establishment of occupational background, (2) the avoidance of leading inquiries, and (3) the use of follow-up questions to pursue topic areas in greater depth. Additional questions centered around interviewees' current work as well as their present and past priorities. This was necessary to assess individual perspectives on the unique challenges of different offices, perceived drivers of environmental change, and the role that MassBays can play as a facilitator of coordinated action.

Supplementing the results from the 2013 group meetings, these interviews construct a mosaic of testimonies that operate on two levels. As narrative accounts of *local* environmental concerns, they offer specific details applicable to the environmental challenges and regulatory climates of many areas. At the same time, they remain connected to the *regional* priority lists. Such range allows for scalar analysis that embraces unique particulars as well as the commonalities that link regions together. In this way we can maintain continuity between regions, while allowing for broad-based, cross-region approaches to problem solving.

Challenges to Methodology

For an interview-based project reliant on stakeholder perspectives, there are certain challenges to its conception and execution. For one, the Massachusetts Bays coastline, stretching from Salisbury on the North Shore to Provincetown on Cape Cod includes fifty different communities including Boston. To collect testimonies from this diverse geographic and population demographic is to encounter a wide breadth of information concerning vastly different communities. No community is the same in terms of its resources. With such heterogeneity, the details of each location—the individual vagaries of place, occupation, topography, and geomorphology—simultaneously accentuate differences and commonalities. Even two narrators from the same location may have different perspectives on the condition of their resources and what they perceive to be drivers of change.

Further complicating matters is the difficulty for both the interviewee and interviewer in parsing out relevant from irrelevant information. As was frequently emphasized by respondents, coastal and watershed concerns are not always connected to obvious pollution sources, but *are* frequently related to society's physical infrastructure wrought from concrete, asphalt, and steel that was designed to make the coast impervious to the elements. In doing so, these structures—the roads, bridges, and buildings that form the sinews of our modern world—facilitate the movement of organic and inorganic contaminants into coastal environments. Unlike environmental issues with relatively easy explanation (and straightforward responses), coastal health is influenced by wastewater, storm water, invasive species, and climate effects that in many cases are less pronounced to the naked eye and certainly more difficult to communicate via public discussion. Water, as a necessary element of everyday life remains for many a phenomenon that (as one observer noted) begins at the tap and ends at the drain. The challenge of articulating the breadth and urgency of these problems with stakeholders not already engaged in the discussion is particularly daunting.

Other Challenges

The Definitive Perspective:

- One of the first objections voiced by participants was the assumption that the interview must be looking for a "definitive perspective" on a set of issues. To gather good information, the interviewer was compelled to discuss with participants the relative validity of individual perspectives even if the connection between those perspectives and the work that MassBays undertakes is not always readily apparent. This also included validating participants' voices in a manner that allowed them to see their own role in the scoping process as a cumulative effort. Reassuring interviewees about the validity of their empirical testimonies helped them to divulge personal perspectives.

Relevance

- The relevance of the outreach was a challenge to participants who in some cases were disillusioned with the system at large and in other cases had conceptual difficulty envisioning how they fit into the process or what they could contribute to the overall endeavor. Because watershed conservation and restoration work encompasses so many different stakeholder communities, articulating the purpose of the outreach program in an inclusive manner proved important.

A Stake in the Outcomes

- Another barrier to gaining the participation of new stakeholders was some individuals' perception that they do not have a stake in the outcomes. Unfortunately, as an interviewee's perception of his or her stake in the outcomes diminishes, the individual's willingness to engage in discussion also decreases. For future scoping attempts, drawing these stakeholders into discussion will require innovative methods of approach that can further solidify the linkage between coastal health and a potential stakeholder's conception of his or her official duties and responsibilities. Close attention to an individual's particular frame of reference may be necessary. One solution may be to activate them by directly appealing to their concerns in language that is familiar to them.

Post-Scoping Findings

The scoping interviews collected input from thirty-three individuals from the Upper North Shore, Salem Sound, Metro Boston, South Shore, and the Cape Cod regions. The views expressed in the interviews included a range of priorities, concerns, needs, ambitions, resource perspectives, ideas of progress, faults in the state system, environmental necessities, limitations of office, reference to area-specific duties, perspectives on

constituent/mission conflicts, virtues and limitations of legal and state apparatuses, projections for the future, and overall descriptions of area environmental patterns.

Interviewees provided candid assessments of their areas in terms of environmental health and town efforts to address environmental issues. Views on resource quality tended to differ according to narrator especially if the office concerned was not primarily conservation oriented or there was a specific goal of which they were in pursuit. Some articulated similar modes of improving resource health by acting in collaboration with other towns. They frequently noted the difficulty in doing so.

Knowing the concerns and individual perspectives of diverse stakeholders provides us with an advantage in conceiving of the region as a whole instead of a set of atomized perspectives. This tapestry of viewpoints yields small truths when its component testimonies are considered in relation to one another.

Coastal Issues & Solutions

Key: The format below lists the concerns of each individual as "issue + issue, etc.." In italics are plans or thoughts regarding how those challenges may be addressed.

Example:

1. Issue + Issue + Issue (Participant Name, Office, Affiliation)
    a. *Strategies for addressing concerns.*

Upper North Shore

1. Sea Level Rise + Climate Change + Stormwater Improvement + Beach Erosion + Identification of High Risk Locations (Ray Faucher, District Manager, DCR)
    a. *Work with MassBays on land acquisition, public education initiatives, develop individual management strategies for individual places that take into account their geographic nuances while also maintaining a concept of how they fit into the entire coastal matrix.*
2. Sea Level Rise + Public Health from Mosquito Infestations + *Phragmites* + (Emily Sullivan, District Manager, NEMMC)
    a. *Smart infrastructural improvements, better community management, stormwater design improvements, public education.*
3. Storm damage + Sea Level Rise + Site Specific Concerns for Road Maintenance & Redevelopment (Gerri Falco, Conservation Administrator, Rockport & Tim Olson, Highway Superintendent, Rockport)
    a. *Improving stone revetments, and hard coastal infrastructure, increased coordination between MassBays and town ConsComms that gives the CCMP greater visibility*
4. Water Quality from Merrimack River Sewage Discharge + Invasive Green Crabs (Paul Hogg, Shellfish Constable & Harbormaster, Newburyport)
    a. *Conversations between municipalities about sewage treatment, coalition-based efforts to combat green crabs, MassBays should emphasize oyster restoration in its North Shore work*
5. Invasive Green Crabs prey on shellfish beds + Shellfish Seeding Efforts + Climate Effects (John Gundstrom, Shellfish Constable, Rowley)
    a. *Cooperation by North Shore towns to address crab issue by locating markets*
6. Invasive Green Crabs preying on softshell clam population + Law Enforcement Issues + Climate Change + Warming Patterns (Scott LaPreste, Shellfish Constable, Ipswich)

    a. *Working with state legislators to find market solutions to crab issue, considering the crab's ecological effect on other inshore species including eelgrass,*
7. *Phragmites* + Beach Erosion + Sea Level Rise + Climate Change + Water Quality + Dam Removal + Septic Remediation (Doug Packer, Conservation Agent, Newbury)
    a. *Cooperating with MVPC on coastal initiatives, MassBays could act as convener for inter-regional stakeholder conversations regarding wastewater/storm water solutions.*

Salem Sound

1. *Phragmites* Infestation + Marsh Drainage + Community Investment + Wetland Use (Geoff Lubbock, Goldthwait Marsh Trustee, Marblehead)
    a. *Phragmites eradication by spraying, cooperation between town ConsComm and NE Mosquito Control, maintain drainage trenches in marsh, community education regarding proper marsh use and care*
2. Public Safety + Law Enforcement + Potential Effect of Power Plant Construction on Harbor + Environmentally Friendly Moorings + Channel Dredging + Waterfront Development (Dan McPherson, Harbormaster, Beverly)
    a. *Continuing to pursue partnerships with local and state agencies to secure funding, in terms of environmental conservation focusing on public willingness to respect impact on the environment if incentivized properly*
3. Impervious Surfaces + Urban Development + Limitation of ConsComm Authority + Redevelopment of Pre-Existing Infrastructure + Renovation of LNG Power Plant + Sea Level Rise & Overall Effects of Climate Change (Tom Devine, Conservation Agent, Salem)
    a. *Maintain Salem's strong network of stakeholder bodies and the flow of information between them, land acquisition, focus on climate change and development concerns*
4. Storm Water + Wastewater Discharges (Devon Winkler, Aquatic Biologist, Salem)
    a. *Grassroots activism, identification of community concerns, translation of concern into political priority for the state, change public mentalities that see environmental declension as unalterable, maintain awareness of individual stakeholder perspectives on resources, maintenance of physical infrastructure*
5. Building Yacht Club Business + Regulatory Compliance + Customer Retention (Dan Delorenzo, Yacht Club owner, Danversport)
    a. *Diversifying services, improving customer care, promoting eco-friendly boat practices for receptive clientele, more dissemination of practical information*

Metro Boston

1. Teacher Training + Professional Development + Education for the Under Served + Empowering Individuals Through Knowledge + Catalyzing Action & Investment from Knowledge (Carole McCauley, Outreach Coordinator, Northeastern Marine Science Center)
    a. *Networking with science-based institutions to solidify institutional support, employ innovative strategies for bridging gaps between regulatory and scientific communities, increase education beyond technical assistance, tailoring education to specific audience frames of reference, establish reciprocity between academic research and government*
2. Maintaining herring runs + Eutrophication of Herring Spawning Ponds + Invasive Plant Species + Dredging Herring Pools + Public Water Supply Withdrawal + Flood Control Barriers + Salt marsh Restoration + Tidal Restriction Work + Seawall Reconstruction + Beach Nourishment (Mary Ellen Schloss, Conservation Administrator, Weymouth)

    a. *State technical assistance, increased services and resources from MassBays*
3. Water Quality Improvement + Storm Water Outflow Control + CSOs + Contaminated Sediments + Phosphorus Inputs + Invasive Plant Species + Developing Green Corridor Along River + Public River Access + Herring Runs + Nurturing Holistic Vision of River Ecology and Management (Ek Ong Kar Singh Khalsa, Mystic River Watershed Association, Arlington)
    a. *Aid from MassBays in articulating the river's problems as products of an urban/natural interface responsive to human/nature systems, CCMP as educational tool that impresses upon readers the link between land-based processes and riverine impacts, effective communication that tells the river's story in a manner that fosters public investment and understanding, use of education to activate a public will*
4. Water Quality + Monitoring Efforts + Invasive Plant Species + Fore River Access + River Cleanups + Fishway Restoration + Storm Water Runoff + Impermeable Surfaces + Climate Change + Impediments to Restoration Efforts (Kelly Phelan, Conservation Planner, Braintree)
    a. *More public support and volunteer strength, a central repository of regulatory information, collaborative support for environmental efforts*
5. ConsComm Limitations + Plover Conservation + Dune Erosion + Beach Nourishment + Flood Map Designations + Shoreside Structural Improvements + Lack of Funding & Maintenance + Storm Water Permitting + Short Timeframes for Sewer Repair (Andrew DeSantis, Revere Conservation Commission & Chelsea DPW, Revere & Chelsea)
    a. *Dune grass restoration, control of public access to ecologically vulnerable areas, nonprofit partnerships for green infrastructure, storm water education and outreach*
6. State Mentalities Toward Restoration Work + Intellectual and Methodological Divides Between Academic and Applied Science + Maintaining Stakeholder Engagement on an Issue Basis + Public Antipathy Towards Shorebird Conservation (Susannah Corona, National Park Service, Boston Harbor Islands)
    a. *Reconsidering approaches to restoration work and definitions of success, restoration work should be conducted in a manner that allows for consideration of both the limitations and flexibility of an ecosystem which is often not the case.*
7. Climate Change + Sea Level Rise + Storm Damage + Coastal Erosion + Flood Damage + Beach Management (Anne Herbst, Conservation Administrator, Hull)
    a. *Educate and plan for effects of sea level rise, ConsComm is becoming more active as a vehicle for outreach and public education, improve coastal infrastructure so that it is more resilient*
8. Invasive Plant Species + Climate Change Effects + Public Knowledge of Invasive Species Eradication Techniques (Lou Wagner, Regional Scientist, MassAudubon)
    a. *Community outreach to ConsComms, relaying accurate information about current environmental threats to municipal offices, public/technical education regarding eradication efforts*

South Shore

1. Water Quality Control + Beach Management + Sewer Renovation + Tide Gate Scheduling + Harbor Dredging + Phragmites + Pond Drainage + Culvert Widening/Fishway Restoration + Funding Shortages + Improving Green Infrastructure + Finishing Sewer Repairs + Nutrient Loading + Storm Water (Paul Shea, Conservation Agent, Cohasset)
    a. *Ongoing sewer work and rain gardens that have improved water quality of Little Harbor, consideration of Cohasset's geology in storm water planning, continuation of storm water mitigation projects, MassBays outreach and education on projects*
2. Public Safety + Proper Resource Use + Marking Navigational Hazards + Marsh Erosion + Educating Recreational Boaters (Ron Mott, Harbormaster, Norwell)
    a. *Outreach and education to harbormasters, topical seminars*

3. Estuary Sodium Chloride Levels + Water Withdrawal + Impervious Surface Impacts on Groundwater Recharging + Private Well Regulation + Nonpoint Source Pollution + Evaluating Impacts of Impervious Surfaces (Peter Dillon, Water Commission, Norwell)
    a. *Addressing storm water mitigation on a watershed basis, MassBays can help implement/communicate a vision of the South Shore's issues on a watershed/holistic basis, organize educational forums, shift focus away from water supply and withdrawal toward impervious surface mitigation*
4. Public Safety + Proper Marsh Use + License and Code Enforcement + Silt Accretion (Dennis Carvalho, Harbormaster & Shellfish Constable, Kingston)
    a. *Continued care for shellfish resources & river channel dredging proposal*
5. Anadromous Fish Passage Restoration + Shellfish + Post-Restoration Monitoring + Sewer Outfall + Barrier Beach Protection + Wastewater + Sea Level Rise (David Gould, Director of Marine Affairs, Plymouth)
    a. *Town/academic partnerships for monitoring and restoration work, wastewater improvement projects, MassBays stakeholder coordination for wastewater management issues, comprehensive data collection for municipal use*
6. Beach Nourishment + Conservation Land Management Plans for Protected Species + Shorebird Nesting + Climate Change + Storm Effects (Jorge Ayub, Coastal Ecologist, DCR)
    a. *Dune reinforcement projects, indigenous plant restoration, habitat restoration for shorebird nesting*

Cape Cod

1. Adapting to Climate Change + Shellfish Aquaculture + Dune Restoration/Natural Resilience + Cranberry Bogs Abutting Wetlands + High Turnover Rates for Homeownership that Impede Social/Environmental Investment + Benthic Communities In Upper Cape Ponds + Storm Water + Dredging + Nitrogen Loading (Coastal Resources Committee, Barnstable)
    a. *Public education regarding storm and waste water, outreach efforts about shellfish that counteract sensational media representations, acquiring federal/grant funding to pursue projects*
2. Progress on Fishway Restoration Projects + Expanding Herring Monitoring Efforts + Water Quality for Shellfish and Herring + Funding Constraints + Private Land Owner Conflicts + *Vibrio* + Continuing Data Collection + Municipal Shellfish Propagation Program + Collection of Northeast Specific Nitrogen Data + Storm Water + Wastewater + Potential Opening of Herring Rivers to Harvest + Expanding Offshore Aquaculture (Abigail Franklin & Diane Murphy, Cape Cod Cooperative Extension, Barnstable)
    a. *MassBays support to DMF for ongoing work qualifying rivers as sustainable, grant money for projects, continued research efforts and environmental monitoring*
3. Property Acquisition + Habitat Restoration Efforts on Sandy Neck + Protecting Coastal Infrastructure + Storm Damage + Sea Level Rise + Beach Erosion + Sand Retention + (Rob Gatewood, Conservation Administrator, Barnstable)
    a. *Use of coconut envelopes to prevent erosion, advancing land acquisition goals and ongoing restoration efforts, finding ways to reinforce current infrastructure*
4. Erosion + Coastal Protection + Beach Nourishment + (Jim Gallagher, Conservation Agent, Brewster)
    a. *Continued use of drift fence and identification of better erosion solutions without use of hard structures, use of coconut envelopes*
5. Update to Section 208 Water Quality Plan + Storm Water Mitigation + Continued Development + Nitrogen Loading (Heather McElroy, Cape Cod Commission, Barnstable)
    a. *Watershed-scale solutions to wastewater and storm water, constructed wetlands, fertigation wells, eco-toilets, rain gardens, bio-remediation, storm water filtration mechanisms, vulnerability analysis*

for expansion of salt marsh restoration efforts, closer coordination with Americorps, MassBays could bring stakeholders up to speed on available resources and best practices, continue to foster conversations between stakeholders

6. Coastal Erosion + Permitting for Home Development + Dune Restoration + Sea Level Rise + Difficult Issues to Articulate to Public (Pat Pajaron, Conservation Agent, Truro)
    a. *Public education regarding home improvements and permitting process, limitations on development by Wetlands Protection Act, how to make property repairs in a lawful manner, MassBays initiation of public outreach program on sea level rise effects and property rights/wetland protection*

Table of 2014 Scoping Issues (Issues Ranked by Frequency Highest to Lowest)

Key: Purple=5, Red=4, Blue=3, Green=2, Black=1

North Shore	Salem Sound	Metro Boston	South Shore	Cape Cod
Climate Change	Power Plant Construction	Invasive Species	Beach Erosion	Beach Erosion
Invasive Species	Invasive Species	Storm Water	Wastewater	Climate Change
Shellfish	Climate Change	Education	Harbor Dredging	Storm Water
Beach Erosion	Community Investment	Herring	Herring	Shellfish
Water Quality	Wetland Use	Beach Erosion	Public Safety	Nitrogen Loading
Identification of High Risk Locations	Public Safety	Climate Change	Proper Resource Use	Wastewater
Public Health	Law Enforcement	Flood Control	Climate Change	Protecting Coastal Infrastructure
Storm Damage	Environmentally Friendly Moorings	Water Quality	Water Quality	Education
Stormwater	Channel Dredging	Public Access to Rivers	Tide Gates	Permitting for Home Development
Law Enforcement	Waterfront Development	Shorebird Conservation	Invasive Species	Storm Damage
Dam Removal	Impervious Surfaces	Shoreside Structural Improvements	Pond Drainage	Habitat Restoration
Septic Remediation	Urban Development	Flood Maps	Green Infrastructure	Property Acquisition
	Limitation of ConsComm Authority	Limitations of ConsComm Authority	Nutrient Loading	Expanding Offshore Aquaculture
	Redevelopment of Existing Infrastructure	River Cleanups	Storm Water	Land Owner Conflicts
	Storm Water	Monitoring	Marking Navigational Hazards	Data Collection
	Wastewater	Holistic Vision	Marsh Erosion	Water Quality
	Maintaining Business Profits	Developing Riverine Green Corridors	Education	Herring
	Regulatory Compliance	Phosphorus	Sodium Chloride Loading	Dredging
	Customer Retention	Contaminated Sediments	Water Withdrawal	Benthic Communities

		Wastewater	Impervious Surface Impacts on Groundwater	High Homeowner Turnover
		Seawall Reconstruction	Private Well Regulation	Cranberry Bogs Abutting Wetlands
		Tidal Restrictions	Nonpoint Source Pollution	
		Marsh Restoration	Law Enforcement	
		Water Supply Withdrawal	Shellfish	
		Storm Damage	Monitoring	
			Conservation Land Management	
			Shorebird Conservation	

Thematic Elements

Several broader themes offer cohesion to the site-specific concerns that interviewees expressed during the scoping. These themes in some cases reflect continuity between the previous scoping efforts and in other cases prompt new consideration of the relationship between communities and their coastal environments.

Knowledge & Action: For many individuals, coastal issues can be difficult to conceptualize due to the often systemic nature of those problems. Knowledge of coastal environments and ecology can provide the educational base necessary for public engagement with environmental issues. However, education is only the first step toward action and investment. Activating meaningful public engagement around environmental concerns remains a challenge.

Advancing a Watershed Perspective: Coastal watersheds encompass vast areas that frequently cross town, county, and state boundaries. To visualize watershed areas as zones of connectivity requires an engagement with hydrologic and policy perspectives in relation to their socio-political boundaries. One narrator expressed appreciation for the City of Portland, Maine's active embrace of problem solving strategies on a watershed basis. Another emphasized the importance of recognizing the relationship between urban and natural environments in the development of a watershed perspective.

Coastal Adaptation: As climate change effects force towns to adapt, coastal managers are rethinking the nature of coastal infrastructure. Emphasis on coastal resilience is evolving to embrace innovative methods for protecting existing structures and habitats. One of the greatest challenges for planners is using natural systems to create dynamic and responsive contingencies for coastal events while maintaining habitable community spaces.

Outreach & Education: Interviewees articulated a general acknowledgement that public engagement rests upon effective communication of environmental issues. Stakeholders discussed education as an issue in both technical/regulatory settings and general outreach. Interviewees suggest that outreach on general coastal issues must resonate with citizens' everyday lives and local concerns.. As general outreach takes place, discussion may also help identify commonalities that stimulate coordination among towns.

Scoping Results 2013—2014: Cross-Cutting Needs & Habitat Action Matching

Many of the views solicited during the secondary scoping campaign aligned with the issues that dominated the previous season's discussions. Below are the scoping conclusions from those meetings paired with their corresponding inputs from the second round of interviews.

Cross-Cutting Needs

2013 Scoping Results	2014 Scoping Results
Implementation of Improved Storm Water Management	*Storm water management remains a high priority consideration for towns interested in compliance with the MS4 storm water permits. Shifts in regulatory regimes between the North Shore and Cape Cod demonstrate different approaches to mitigating a universal problem. Organizations on the Cape are considering bioremediation and other methods of improving filtration.*
Encourage regional collaboration for planning and implementing climate change adaptation responses	*Climate Change concerns loom for towns that are threatened with beach loss and residential impacts from rising water levels. Solutions range from short-term measures that replace sand and bolster soft infrastructure to state land acquisition efforts. Recognition of climate change has been manifested by landowner challenges to flood maps, locating markets for undesirable marine species, adaptation to rising sea levels, and continued efforts to eradicate invasive species.*
Encourage cross-agency cooperation and planning for restoration projects	*Restoration work by the DER, NRCS, and DMF currently pertains to storm water, marsh restoration, and fishway/shellfish restoration. Concerted effort between nonprofits, towns, and the state remains essential to progress and legal compliance.*
Determine/compile the state-of-knowledge of the benefits provided by coastal habitats	*Ecosystem services along the MassBays coast are of great value to industries such as tourism and fishing. As evidenced by the Urban Harbors Institute's recent survey of academic and grey literature pertaining to the state's coastal environment, the base of knowledge is increasing. Especially as climate change concerns continue to drive conservation perspectives, this will continue. There is a*

	significant need to bridge gaps between scientific/academic and regulatory/policy communities to facilitate the transfer of knowledge. Challenges include gaps in monitoring and the changing nature of coastal ecosystem inputs and outputs.

Habitat Specific Actions

2013 Scoping Results	2014 Scoping Results
Remove all traditional moorings from eelgrass beds	*Several respondents noted that the public is often ready to learn and respond to conservation initiatives regarding areas of recreational concern. Accessible information is important for the continued education of pleasure boaters. The introduction of eco-friendly moorings can be prohibitively expensive. There may be a challenge in broaching this topic with harbormasters who have placed their faith in traditional moorings and who view their office as primarily oriented toward public safety. Harbor outreach may be useful in establishing a connection between public safety and environmental health. Also to note, green crabs have been blamed for degrading eelgrass habitat as well.*
Restore shellfish beds, taking into consideration the impacts of ocean acidification	*The challenges facing shellfish populations vary widely across the regions and are highly site-specific owing to their sedentary nature. Factors affecting shellfish health include municipal wastewater systems, downstream impacts from sewage and nonpoint source pollution, invasive species such as green crabs, land use conflicts, and Vibrio. Because shellfish fall under multiple regulatory jurisdictions, an open dialogue between the state, towns, and growers may facilitate ease of propagation.*
Encourage beach management plans that consider habitat value	*Beach management challenges include the balance between habitat enhancement and public access. Plover populations in several areas have drawn public ire for the space that is devoted to their conservation. A significant aspect of habitat-based beach management may be outreach related in order to communicate the fragility of that balance. Conventional measures for dune erosion are*

	*not working which has prompted some progressive individuals to look at the issue not as a matter of keeping sand in one place but of improving the **natural** absorbency of coastal habitats.*
Model potential for marsh migration in response to sea level rise	*Sea level rise impacts are broad. Newly inundated areas may be more susceptible to mosquito and Phragmites infestation as salinity levels change. GIS modeling similar to MVPC efforts on the Great Marsh and MassAudubon's public school mapping lessons may provide guidance for mitigating marsh habitat variability.*

Conclusions & Recommendations

During this scoping campaign, thirty-three stakeholders with backgrounds including those of municipal officials, restoration specialists, business owners, state officials, harbormasters, shellfish constables, and academics lent their input. The thoughts that they expressed reflected their highly individual perspectives on the challenges facing their regions and even more importantly on the nature of their relationships with their coastal resources. They communicated an intimate familiarity with communities and coastal ecosystems. Gathered through a suite of open ended questions, these perspectives sought not to lead participants but instead allow them to express their thoughts on various coastal concerns. Most importantly, the opinions expressed in these interviews reflect the nature of the tripartite relationship between individual, office, and resource.

The views that they expressed are not uniform. In this manner, they are a truthful representation of the breadth of concern that presently exists within the Massachusetts Bays watershed area. We have at hand the reality that issues are perceived differently according to location because each town's resources, needs, and priorities are uniquely their own. Encapsulated within this are themes that do speak to the commonalities linking towns and regions together. What emerges is a matrix of information that accurately reflects the current conditions of coastal areas from the Upper North Shore to the Outer Cape.

This sampling of perspectives is not an exhaustive study in that it only reached those who were most willing to take part in the process. Missing from these perspectives are the voices of municipal officials who perhaps had difficulty envisioning their stake in the outcomes of MassBays' work. Helping to facilitate that connection will be a challenge for future outreach endeavors that hope to engage those stakeholders.

In general, the findings of this scoping attempt are closely aligned with the results of last year's stakeholder meetings. Like last year, a persistent concern for climate change effects and sea level rise seemed to drive many secondary priorities such as beach erosion and flood control. Along with that, individuals reiterated that MassBays can work well as a facilitator and convener of partners. Education and outreach also remain important for the continuation of restoration work and especially for introducing homeowners to the nature of sea level rise.

In conclusion, the information gained from this scoping campaign is useful on a broad level. It supplements the concerns stated during the initial scoping efforts in 2013 and it may act as a reservoir of useful information as MassBays presses ahead in the building of coalitions and collaborative partnerships.

Final Recommendations Based on Scoping Perspectives

- Continue grant program
- Increase outreach efforts with emphasis on roles guiding, advising, educating, and connecting, particularly to towns whose ConsComms lack resources
- Emphasize technical and community education
- Consider expanding name recognition and branding
- Continue facilitating local/state conversations and use leverage as state organization to bring stakeholders into collaborative discussion
- Emphasize adaptive responses to climate change and sea level rise
- Facilitate bridging between academic and regulatory communities
- Behave as resource coordinator for coastal Conservation Commissions interested in informational resources
- Support DMF in its evaluation of herring

Appendix G. Agenda and Results of Interagency Information-sharing Sessions

Massachusetts Bays National Estuary Program
Information Exchange Session

100 Cambridge Street
9th floor legal conference room

October 2, 2014 Participants
Sam Cleaves/MAPC, Tim Dexter/DOT, Hunt Durey/DER, Kathryn Ford/DMF, Heather McElroy/Cape Cod Commission, Regina Lyons/EPA

October 8, 2014 Participants
Michael Celona/DPH, Joe Cosgrove/MVPC, Lealdon Langley/DEP, Regina Lyons/EPA, Robbin Peach/MassPort, Vandana Rao/EEA, Betsy Reilly/MWRA, Brad Washburn/CZM

Meeting Objective
Exchange information about programs and activities underway and planned by state agencies and RPAs in Massachusetts Bay and Cape Cod Bay, to identify opportunities for MassBays contributions.

Agenda

10am Gather, introductions

10:10 Background:
Comprehensive Conservation and Management Planning
Goals and Strategies
Proposed action items, and an example

10:20 Existing and planned agency programs and initiatives
Consider the following:
- In what areas (geographically and topically) can MassBays complement your agency's work?
- What specific information is needed to advance habitat protection and restoration in Massachusetts Bay and Cape Cod Bay? What data gaps can we help fill?
- How can MassBays magnify and augment your agency's impact?

11:30 Opportunities for collaboration
Compile topics and activities for potential collaboration among agencies, both with MassBays and others.
Identify potential funding sources or cost-sharing opportunities for collaboration on specific projects.

12pm Adjourn

Re: Strategy 1a. Make data available, attendees suggested that MassBays:

- Document impact of "green" approaches.
- Conduct rainfall-water quality modeling.
- Support eelgrass delineation and mapping.
- Support citizen monitoring and management efforts.
- Delineate mean high water in salt marshes.
- Identify and address knowledge gaps.
- Review studies of climate change impact on restoration and management activities.

Re Strategy 2a, Conduct outreach and training regarding the value of estuaries, attendees suggested that MassBays:

- Promote timely implementation of living shorelines for long-term habitat protection.
- Address perception of eelgrass as a nuisance species.
- Address Rivers Protection Act implementation in the coastal zone.
- Promote model restorations and practices that have proven successful.

Re: Strategy 2b, Prompt local decisionmaking based on research findings and trends data, attendees suggested that MassBays:

- Make the wealth of climate change information useful for municipal planning.
- Use tide gate inventory outputs to prompt adoption of sound management practices.
- Provide guidance to communities re: responding to harmful algal blooms.
- Share information about economic tools for habitat protection and restoration.

Re: Strategy 3a, Establish embayment-specific targets for improvement, attendees suggested that MassBays:

- Identify indicators and metrics for multiple embayment "types."
- Establish a methodology for comparisons across embayments in similar settings.
- Tie municipal-level MS4 permit compliance to embayment-specific water quality targets.
- Utilize Gulf of Maine sentinel monitoring recommendations to detect climate change impacts.
- Examine the potential to bring stormwater treatment component to DOT Complete Streets program.

Appendix H. Roadmap to a Revised CCMP for MassBays

EPA Guidance	**MassBays proposed response, 7/17/17**
Scope of CCMPs – All CCMP action plans must be consistent with and tie back to CWA Section 320. Action plans must identify the needed resources and sources of resources expected to be secured. It is especially important to distinguish between actions funded under Section 320 and those to be implemented with other sources.	***MassBays' CCMP will include explicit reference to the provisions of CWA Section 320. The CCMP will include actions anticipated to be funded by §320 funds; where supplemental funding is needed it will be clearly noted.***
CCMP Revisions versus Updates – The Funding Guidance describes when a CCMP Revision or an Update would apply. Revisions involve a significant change. For example, a CCMP Revision could be driven by: 1) new CCMP goals, as directed by the Management Conference, 2) new information obtained through monitoring that would require revisiting and changing the actions in a CCMP; or 3) an expansion of the study area. A Revision would also be necessary in cases where original CCMPs have not yet been revised. Minor changes to action plans or insertion of a few new actions would be considered an Update. Reformatting, streamlining or reorganizing core actions to reflect new ways of accomplishing original CCMP goals would also be considered an Update.	***MassBays is preparing a CCMP Revision, with a 10-year timeline. The revision is driven by the following: 1) the Management Committee identified new programmatic and organizational goals in 2015; 2) the current CCMP was published in 1996, and many conditions have changed in the interceding 20 years.***

EPA Guidance	MassBays proposed response, 7/17/17
Review Process – The Region is in the lead with respect to CCMP Revisions and Updates. The Region will work in concert with HQ, using the CCMP Content Checklist and the NEP Funding Guidance as a basis for engaging in the concurrence process. Regional Coordinators will work with the NEP Director and Management Conference to follow the checklist so that the set of content requirements are reflected in the final CCMP and associated documents. ¶ To ensure a common understanding and level of support for the final CCMP, this process assumes that the HQ and Regional Coordinators are regularly communicating and collaborating as needed throughout the process. The Regional Coordinator is responsible for timely communication and for managing the overall review schedule. EPA expects that the NEP will make the changes necessary to the CCMP and associated documents to reflect the Content Checklist. HQ Coordinators will need to honor the CCMP review schedule, while Regional Coordinators need to share documents to allow adequate time for review.	***MassBays has worked closely with our EPA Regional Coordinator to scope out this roadmap for completing the CCMP revision. We are committed to working with EPA Region 1 and Headquarters to finalize a CCMP that both reflects the Management Committee's goals and meets EPA's needs under this guidance.***
Program Evaluations – To ensure the seamless integration among key NEP products, EPA expects that the Program Evaluations will consider the need, if any, for revisions or updates to the CCMP. EPA also expects that State of the Bay Reports will inform any CCMP Revisions and Updates.	***MassBays' Revised CCMP will include a section on plans and methods for incorporating State of the Bays into CCMP implementation and performance measurement. MassBays will prepare two versions of the revised CCMP: 1) A web-based, official version, which will be assembled on a webpage dedicated to the CCMP with links, maps, and graphics. The webpage will include official, dated statements of approval from the Management Committee and EPA. This format will allow us to provide ready access to background materials and cut down on physical resources needed to share the document with stakeholders and partners. All will be offered in alternative formats for universal accessibility.*** ***2) A printed summary suitable for sharing with multiple audiences at public venues and meetings which includes prompts for accessing the online documentation.***

EPA Guidance	MassBays proposed response, 7/17/17
Identify clearly if there are any changes between the existing and draft CCMP so that reviewers and the public can easily determine what has changed and why. These changes include program priorities and goals; any new information that suggests more promising approaches or currently unaddressed issues, etc.	***MassBays will include a background section describing the requirements under §320 to prepare a CCMP, and the need for a revision for our planning area. While the content and approach of the 1996 CCMP makes it difficult to definitively document that specific actions have been "completed," we will provide reporting on status for each 1996 action, e.g. obsolete—revised—reassigned—ongoing. This will be a simple spreadsheet report-out included in the background section.***
Describe how the NEP has contributed to or supported activities that helped develop new information, if applicable, when highlighting major changes due to new information. Major changes could be informed by Status and Trends or State of the Estuary Reports, Indicator Reports, and associated monitoring programs where adequate monitoring data are available. This is where a discussion of climate change assessments and adaptation strategies should appear.	***MassBays' investments in research and monitoring have been instrumental in the improvements observed since 1996, in Boston Harbor in particular. The Revised CCMP will highlight those investments. Beyond Boston Harbor, however, there is much to be done, and MassBays' CCMP will address new challenges and impacts posed by climate change, including acidification, more frequent and more intense storms, and expansion of invasive species.***
Include a map of the study area. If there are any boundary changes, provide the reasons for those changes. Any NEP study area boundary changes should be based on sound science with the support and approval of the NEP's Management Conference in a transparent and open process.	***We are not proposing any boundary changes. A map will be included on the CCMP landing page and prominently in the hard-copy materials.***

EPA Guidance	MassBays proposed response, 7/17/17
Describe the NEP's Management Conference and membership with any proposed changes and explain how the structure will support the NEP's ability to oversee and promote CCMP implementation. This would include a discussion about the NEP's approach to achieving financial sustainability and for involving the public and stakeholders in its programs.	***MassBays' unusual organizational structure will be described via an organizational chart, as well as a decision tree that illustrates how yearly workplans are developed in alignment with the CCMP.***
Discuss changes to existing CCMP action plans, and new action plans, including their relationship to previously stated goals and priority problems; the probable causes and sources they address; and measurable objectives, where appropriate, to attain the goal. Each CCMP Action must identify the key activities expected to be implemented to address the priority problem. It would be very helpful to include a table comparing the old completed or deemed obsolete actions, and new, revised, or on-going actions in the CCMP. This could appear upfront in the document, or within each chapter.	***A table compiling the status of the 1996 CCMP activities will be provided as described above. As this first revised CCMP is being developed in a significantly changed environment, few of the specific activities will be carried forward. We expect that this checklist item in the guidance will be more relevant in future revisions, if only for the fact that they should be prepared more frequently (every 10 years instead of 20). In this revised CCMP, we will provide the following:***
CCMP Actions encompass environmental goals, metrics, and milestones that the NEP strives to achieve over time as implemented through annual workplans. They need to be clear, understandable, and plainly link to CWA § 320 (See 4th bullet *under* ***Purpose of Conference***). They should:	***Goals will be described with specific reference to their importance to meeting CWA goals.***
a) describe each action and what is proposed;	***Programmatic and organizationally oriented Actions will be introduced, with context regarding need and expected outcomes.***
b) identify key activities to implement the action, including affected habitat types, or resource(s) if appropriate; some activities may take place system-wide or involve policy changes rather than in-the-ground projects.	***Activities/Strategies for executing proposed actions will be described. These will form the basis for future tasks in MassBays' yearly workplans.***
c) identify proposed action plan responsibilities, including likely lead parties if known, along with any implementing partners;	***Only Activities to be led by MassBays are to be included in the CCMP; anticipated partners will be listed.***

EPA Guidance	**MassBays proposed response, 7/17/17**
d) include a timeframe, and where appropriate, key milestones for completion (or indicate on-going);	***A 10-year timeline will be described, with milestones for each Activity.***
e) estimate the range of potential costs of the overall action and identify the possible sources of funding; and	***Beyond the S.320 funds required to maintain MassBays' work, expected contributions of cash and in-kind support from partners will be estimated for each Activity.***
f) include performance measures (quantitative measures and intended environmental results wherever possible).	***MassBays is committed to providing quantitative performance measures for each Activity. These will feed directly into our monitoring program and STATE OF THE BAYS reporting.***
Those CCMP Actions eligible for CWA §320 funding (and as stated in your EPA Assistance Agreement) will be spelled out and included in the NEP workplan submitted to EPA. CCMP Actions not funded by Section 320 should be clearly identified along with the other potential funding source.	***Only activities to be funded at least in part by S.320 funds will be included in the CCMP.***

EPA Guidance	MassBays proposed response, 7/17/17
CCMPs are living documents and as such should be re-examined and revised on a regular basis. EPA recognizes that CCMPs are also critical components of the NEP model of adaptive management as it facilitates a continual process of integrating new data and results. EPA expects that revised CCMPs will discuss the relevance and applicability of the: 1) monitoring, 2) habitat, 3) finance, and 4) outreach component strategies, including any needed substantive changes. If such changes are not discussed in the revised CCMP as language within a chapter or as a separate Action Plan, they should be described in a separate document and completed within 3 years of the final Revised CCMP.	***The revised CCMP will have a habitat focus. It will include a Monitoring Framework and Financial Strategy as attachments. A Communications Plan, developed once the CCMP is complete, will be tied directly to the final CCMP and its goals.***
Include a Monitoring approach to track and detect changes and/or improvements within the study area (so change in environmental indicators can be detected over time), and effectiveness of CCMP Actions. This can be described in a separate, brief, higher level document, or chapter or action in the CCMP. The Monitoring approach should identify: a) objectives, b) data the NEP and partners are collecting for which parameters; c) the party/parties responsible for collecting the data; d) frequency of collecting and reporting the monitoring data; e) how the data are shared, reported, and used; f) data gaps; and g) additional funding needed for monitoring activities and filling data gaps. This section should explain how monitoring has/will change as a result of new/modified actions and priorities, and any new environmental indicators. Monitoring should be tied to the State of the Bay Report which has similar components. **Please note**: A Quality Management Plan or Quality Assurance Project Plan can supplement the Monitoring Plan, but does not in and of itself meet this requirement.	***A monitoring framework developed by MassBays' Science and Technology Advisory Subcommittee and endorsed by the Management Committee will be included as an attachment.***

EPA Guidance	MassBays proposed response, 7/17/17
Include a Finance strategy that will establish long-term financial sustainability to implement the CCMP through diverse resources and partners. The strategy can be a separate document or chapter or action in the CCMP. The strategy should discuss: a) priorities for funding; b) current funding and other support such as staff assignments, or in-kind partnering; c) short- and long-term resource needs; and d) proposed actions or strategies to maintain or garner new resources for CCMP implementation and their timeframe.	***A financial framework developed by MassBays' Finance Subcommittee will be included as an attachment.***
Include a Habitat Protection/Restoration strategy. The strategy should clearly tie back to habitat or ecosystem issues addressed in the CCMP, including those habitats and species prioritized for protection and or restoration efforts. Strategies can be addressed in a separate document or as an action in the CCMP and should discuss: a) relevant habitat types and key species in the study area; b) goals and measurable objectives to address them; and c) actions that reflect a climate change vulnerability assessment. The Strategy can make it easier for NEPs to plan and report on their habitat protection results under GPRA.	***MassBays' revised CCMP as a whole is focused on habitat protection and restoration. All components listed here will be addressed in the core of the document.***
Include a Communication/Outreach Strategy to ensure community involvement and ownership in CCMP implementation that can be represented as a stand-alone document, chapter, or a series of actions in the CCMP that includes: a) guiding principles, or goals and objectives; b) a target audience(s); c) a narrative description of activities, including any tool used such as branding and messaging, behavior change campaigns, or social media; d) implementers for those activities; e) any key deliverables, and f) a budget and timeframe for implementing the activities.	***A Communications Strategy will be submitted as an Attachment; an implementation plan will be finalized within three years of CCMP submission.***
NOTE: Make sure to include a public review process that extends beyond the Management Conference members. Responses to comments should be summarized and be made publically available.	***MassBays had previously published a Public Review Draft of a revised CCMP, announced at a MassBays-wide event. All comments garnered from that public release have been incorporated into the proposed Activities. This final revised CCMP will be reviewed by MassBays' regional Local Governance Committees and the Management Committee. Following this vetting, a second round of public comment will be solicited prior to final Management Committee endorsement.***

Appendix I. Results of Public Outreach, November 2018

Sources:

Boston Harbor Ecosystem Network meeting
South Shore Municipal Partners meeting
Management Committee meeting and survey
Online survey – Cape Cod responses
Online survey

Data gaps:

- Dock & pier coverage of marsh platform
- Dredged areas/dredge extent (UHI attempted to compile this)
- Historical data retrieval, including pre- and post-restoration monitoring
- Statistics re: seawall permits over time
- Consensus flood maps and other data needed for long-term planning and design
- Shellfish monitoring (DMF)
- Ecosystem dynamics, cranberry bog inputs
- integration of watershed data with regulatory work
- Routine and frequent nutrient monitoring in small embayments.
- salt marsh hydrology, status of species,
- specific populations and needs
- Water Quality
- QAPP templates.
- Analysis of all past restoration project data across the region to show overall success.
- Monitoring post-restoration beyond first year or two.
- Many anadromous fish run population estimates need more people collecting count data.
- Not using updated precipitation or flood and surge maps
- Aquatic invasive species in freshwater river herring spawning ponds
- Standardization of collected data across the estuaries, and a lack of focus on Boston Harbor.
- Presence & extent of hazardous waste contamination
- More comprehensive and timely seagrass monitoring
- Basic water quality parameters
- Outfall monitoring in all MassBays communities. Most of the North Shore communities require improved stormwater management practices to help improve water quality. Public education is key.
- Water quality, fishing quality, swimming quality, habitat quality
- Additional stormwater outfall monitoring is needed - some will be required under NPDES permit but more frequent monitoring would be more useful for analysis
- land use/local regulation assessment
- lack of an integrated one-stop-shopping compendium of WQ information.
- guidance for municipalities to evaluate and choose among adaptation measures.
- public understanding of climate change risks

Research needs:

- Document invasives species' impact on ecosystem services, as opposed to impact on native spp.
- When a neighborhood raises its elevation to prevent flooding, what happens to nearby neighbors and neighborhoods that do not?
- Response of marshes to sea level rise, adaptation that protects marsh habitat into the future
- Cape Cod Bay fisheries study
- Application of herbicides in spawning ponds for the control of AIS and how this might effect larval and juvenile river herring Exploring ways to reduce pollutants impacting habitat sustainability
- relating climate change; eutrophication and toxic chemicals to the "productive capacity" of Essential Fish Habitat
- The effects of altered hydrology, e.g. dredging, tide restrictions, on embayment water quality
- Long-term effects of pollution in estuarine environments that are changing due to climate change
- restoration models that take SLR into account
- Changes in predator-prey interactions due to climate change
- Damage & Conditions resulting from rising seas and super storms.
- addressing migration of fish species from the Mid Atlantic into southern New England waters
- Coastal vulnerability from storms and impacts on evacuation and infrastructure
- I'd like to see more social science and evaluation research carried out so that we all have a better understanding of WHY a certain approach is working, or why specifically an approach did not work
- Impact of accelerating, intensified development
- Habitat resiliency
- Stormwater, sea level rise, coastal resiliency.
- impact of climate change on Bays community and recommended actions towns, cities, and state should take to mitigate/adapt

Education & Outreach needs:

- Visuals – especially video – to illustrate storm surge, storm damage
- Materials that highlight problems and issues – and case studies with solutions – for municipal officials. MassBays & municipal staff can use these materials to convince decisionmakers that they are not isolated in their challenges, and won't be the first to take up a given response. Relevant for MS4, dam removal, resilience actions, investing Ch.90 funds for stormwater/flooding mitigation.
- Compilation of resources (links, applications) in one place online.

Management needs:

- While MVP structure is good (service providers id'd means less contract mgt), projects need to bring ecosystem concerns to the table, and there should be a route to implementation of plans.
- Regional approach (with MassDOT) to Route 3 corridor stormwater and flood management
- Cross-agency assistance to towns for storm response
- Funding for long-range infrastructure planning
- Operational support to towns hit by storms to help with ongoing response and recovery re: rebuilding above elevation, retreating, etc.

Appendix J. CCMP Development Logic Model

[11x17” layout follows, 1 page]

Inputs

Activities (Participants) *internal*

Activities (Participants) *external*

Outputs & Short-term Outcomes

Longer-term Outcomes

Communications tools

- Websites & listservs
- Comm'n networks
- Compelling issues, both good & bad

Content resources

- 1996 CCMP
- 2003 CCMP Update
- Delineation Report
- MBP Strategic Plans
- State of the Bays report
- R&P grant products
- Complementary resource mgt plans
- Knowledge of ecosystems
- Desired natural resource conditions
- Regional Service Providers
- Local Governance Committees
- Other NEPs
- Previous CCMP update efforts
- CZM
- EPA

Human resources

- MBP Central Staff
- Regional Coordinators
- Mgt Committee

CCMP scoping mtg(s) (stop/start/continue) (RSPs, Mgt Committee)

Regional meetings re: priorities and needs (LGCs, RSPs, volunteers)

Interviews Mgt Committeere: regional priorities and needs (elected officials, R&P grantees, existing and

Identify gaps/opportunities for CCMP scope via survey of other mgt docs & NEPs (Staff, Urban Harbors Institute)

Inventory resources and capacity to address priorities (Staff, CZM, DER, EPA)

Identify desired impacts related to each priority (staff, Mgt Committee)

Concise, clear writing (staff, CCMP committee?)

Review draft CCMP & activities (Mgt Committee, other major

MBP vision to inform program and regional priorities

Identified target audiences for MBP education & outreach

In all regions, re-engaged existing partners; new partners recruited

Specific regional and region-wide priorities

Up-to-date understanding of MB, MBP resources, and complementary programs

CCMP scope focused on priorities, informed by capacity

Education and outreach to target audiences

Dynamic, realistic, performance-based guidance re: MB issues

Time-bound (5-8 years), strategic CCMP

Visibility for MBP as relevant and effective, with specific regional and national roles to play

Opportunities for funding proposals with partners

Stronger partnerships in multiple sectors

Efficient, focused field projects coordinated across agencies

Region-wide awareness of goals and priorities for estuary restoration and protection in MB

Defined, measurable outcomes of ecological restoration efforts

R&P Grant program tied to CCMP

Sustained and diverse funding for MBP priority issues and activities

Progress & improvements in all MBP regions, documented in the 2020 State of the Bays report

Timely updates to strategic CCMP that incorporate current conditions

Appendix K. EPA/State Management Conference Agreement, 1990

MASSACHUSETTS BAYS MANAGEMENT CONFERENCE AGREEMENT FOR THE NATIONAL ESTUARY PROGRAM UNDER THE WATER QUALITY ACT OF 1987

WE *recognize the need for a Management Conference for Massachusetts and Cape Cod Bays to better define the environmental concerns in the ecosystem; to address the extent, complexity and sources of pollutants; and to develop a comprehensive conservation and management plan for action. We further recognize that regional and local governments as well as the Executive Office of Environmental Affairs and the Environmental Protection Agency share the responsibility for management decisions and planning for the future of the Bays.*

IN *signing this agreement, we are committing to products and schedules in the Conference's five-year workplan to: assess trends in water quality, natural resources and uses; identify the causes of environmental problems through data collection, characterization, and analysis; evaluate point and non-point loadings and relate them to observed trends; write a comprehensive conservation and management plan which includes recommendations for priority actions; develop plans to coordinate implementation of a comprehensive plan with federal, state and local agencies; monitor the effectiveness of the management actions; and review federal financial assistance programs and federal development projects for consistency.*

WE *also agree that the statutory requirements for Management Conference membership have been met and that we will participate in that conference. Further, we commit that the statutory requirements for matching funds will be met to complete the characterization of priority problems and develop the comprehensive conservation and management plan.*

LaJuana S. Wilcher
LaJuana S. Wilcher
Assistant Administrator for Water
U.S. Environmental Protection Agency

Julie Belaga
Julie Belaga
Regional Administrator
U.S. Environmental Protection Agency
Region 1

MASSACHUSETTS BAYS PROGRAM

Michael S. Dukakis
Michael S. Dukakis
Governor
Commonwealth of Massachusetts

John P. DeVillars
John P. DeVillars
Secretary
Massachusetts Executive
Office of Environmental Affairs

Dated this 13th day of November, 1990

Appendix L. Management Committee Membership, 2013 to 2018

Members, 2013-2015	Organization	Member Category
Julia Blatt	Massachusetts Rivers Alliance	Statewide nonprofit
Robert Buchsbaum	Salem Sound Coastwatch	Regional nonprofit
Bruce Carlisle/Brad Washburn/Lisa Berry Engler	Massachusetts Office of Coastal Zone Management	Standing
Sam Cleaves/Mark Fine	Metropolitan Area Planning Council	Standing
Mel Cote/Regina Lyons	Environmental Protection Agency	Standing
Ed DeWitt/Andrew Gotlieb	Association to Preserve Cape Cod	Regional nonprofit
Tim Dexter	Massachusetts Department of Transportation	Standing
Harlan Doliner/Morgan McCarthy	Marine & Oceanographic Technology Network	Industry/business
Kathryn Ford/Mark Rousseau	Division of Marine Fisheries	Standing
Jon Kachmar/Steve Kirk	The Nature Conservancy	Statewide nonprofit
Beth Lambert/Tim Purinton/Georgeann Keer	Massachusetts Department of Fish and Game	Standing
Wendy Leo/Ken Keay	Massachusetts Water Resources Authority	Standing
Alan Macintosh/Joe Cosgrove	Merrimack Valley Planning Commission	Standing
Rebecca Newhall	NOAA Coastal Program	Federal government
Judith Pederson/Juliet Simpson	MIT Sea Grant	Research and academic
Jane Peirce/Cathy Vakalopoulos/Steve McCurdy	Massachusetts Department of Environmental Protection	Standing
Vandana Rao	Executive Office of Energy and Environmental Affairs	Standing
Maureen Thomas	Town of Kingston	Local government
Geoff Trussell/Jon Grabowski	Northeastern University Marine Science Center	Research and academic
Kristin Uiterwyk/Jack Wiggin	Urban Harbors Institute	Research and academic
Colin Van Dyke	Anderson Krieger	Industry/business
Samantha Woods	North and South Rivers Watershed Association	Regional nonprofit